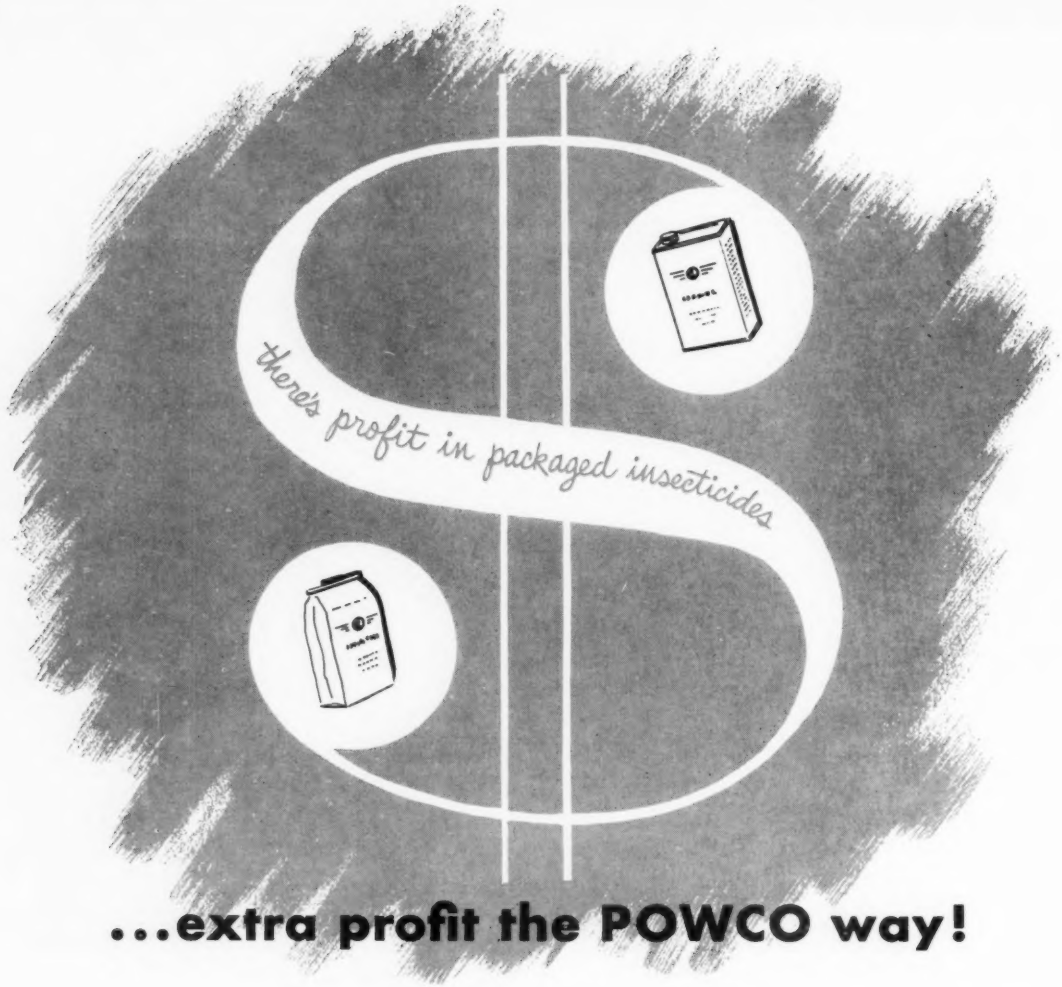
PEST CONTROL

FEBRUARY 1952

EVERY MONTH SINCE 1933

Subterranean termites weakened supports to this stucco railing, causing severe damage to stone upper deck.

MAGAZINE OF THE PEST CONTROL
AND ALLIED SANITATION SERVICE INDUSTRIES



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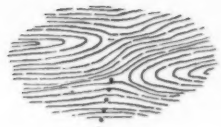

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Opportunities Unlimited II

Last month we read of the opportunities open to PCOs in over-the-counter sales of pesticides and small equipment.

Another surprising market is revealed in a release by the U. S. Dept. of Agriculture that reports over $50,000,000.00 is spent annually by home owners to control termites.

Manufacturers of termite control chemicals have and are going to spend many thousands of dollars to inform the general public of the damage these wood destroyers can do. PCOs who specialize in termite work can take advantage of this increasing termite promotion and should expand their service to develop this profitable field further.

That slab construction has become a major headache to termite men is already established. But few have attempted to sell builders on the advantages of termite-proofing the soil *before* slabs are laid down. This business in itself is virtually untouched by PCOs and should be promoted fully.

Suppliers of building materials, chemicals, tools and related equipment, too, should take notice of the importance of termite work in this country. They could profitably sponsor research to discover more effective control procedures. The NPCA's Approved Reference Procedures for Subterranean Termite Control is a monumental work outlining steps to be taken in a majority of cases. More work needs to be done, however.

Termite control is a big market. PCOs are in the best position to serve the market with their specialized knowledge.

James A. Nelson
Editor

PEST CONTROL

EVERY MONTH SINCE 1933

JAMES A. NELSON
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West Coast Representative

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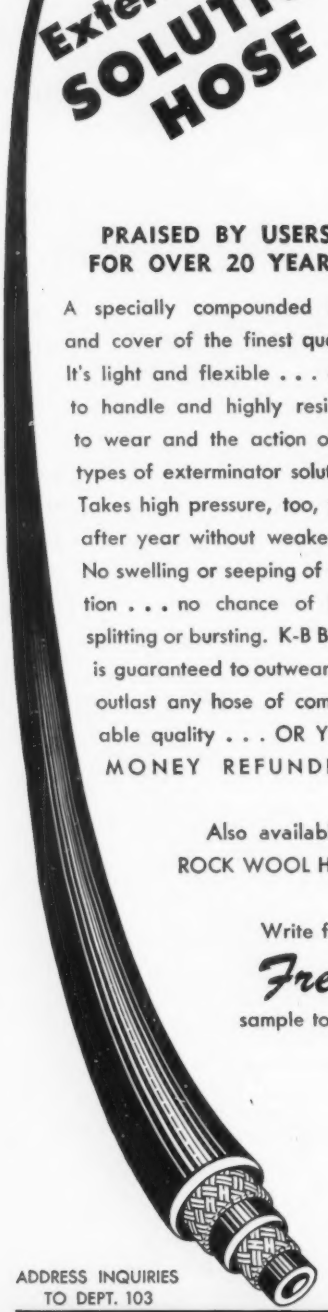

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letters

Faneuil Hall Grasshopper

The illustration of the Faneuil Hall grasshopper on the cover of the October number of PEST CONTROL was of special interest and has no doubt raised some inquiries as to why a grasshopper of all animals should have been selected as the weather vane over this historic building. During the years 1936-37 I had the opportunity to spend most of my time in London and in traveling by auto throughout England. One of the objects that interested me much was the large gilded or golden grasshoppers that adorned the branches of the Royal Exchange. I enclose a photograph of one of these that hung over the doorway at Greenwich taken Sept. 8, 1936.

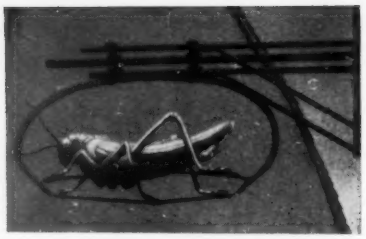
Upon inquiry and reading I have patched up this story:

Merchant's Emblem

The grasshopper was the crest of Sir Thomas Gresham (1519-1579), a London merchant, who founded the Royal Exchange and Gresham College, London. Gresham was a man of affairs and acted as the financial agent and advisor of King Edward, Queen Mary, Queen Elizabeth. This bit of history is intended to show how the grasshopper came to be the sign of a merchant and suggests that the use was possibly carried to the colonies. I have not been able to ascertain if a grasshopper weather vane occupied its present position on Faneuil Hall when it was erected by Peter Faneuil, a Hugenot merchant, who gave it to the City of Boston in 1742. The hall was enlarged in 1805 and subsequently reconstructed in 1898.

Faneuil Hall has been called the "Cradle of American Liberty" because it was associated with the liberty of the colonies and with reform movements and great national issues. Throughout the years it has been the headquarters of the "Ancient and Honorable Artillery Company of Boston", the oldest military organization of the country, organized in 1683.

Returning from my year abroad I visited Faneuil Hall and was impressed with two things: first, the fact that the gangs of youngsters, who wished to be guides, and most of the residents in that section, spoke with a decided foreign accent—apparently Italian; second, the ground floor of the building was almost entirely surrounded with small shops of various kinds. In thinking the matter over I fancied that the early merchant business aspects may have had something to do with the grasshopper vane!



"English" Grasshopper is Merchant's Emblem

E. O. Essig

Division of Entomology and Parisitology
University of California
Berkeley, Calif.

No Trouble With Wood Beetles

I wish to take issue with the statement attributed to Dr. H. W. Frings of Pennsylvania State College's entomology department. With all respect to the doctor, I have no trouble at all eradicating powder post beetles from furniture or structural timbers.

The equipment I use is the Todd Insecticidal Fog Applicator and the chemical is a 5% oil solution chlordane. One quart of this formulation per 8000 cubic feet does a fine job on all stages of powder post beetles and leaves a residual which is effective against most household pests.

I believe my method is a little better all around and a little more within the field of the average PCO.

John J. O'Connor

Professor Frings' statement, referred to by reader O'Connor, indicated that no effective chemical control is now available for powder post beetles. The professor stated that radio frequency heating waves may be the best way of eliminating this pest. His ideas on the subject appeared in Paul Herbert's "Extracts" column, page 12 of Pest Control's January, 1952 issue.

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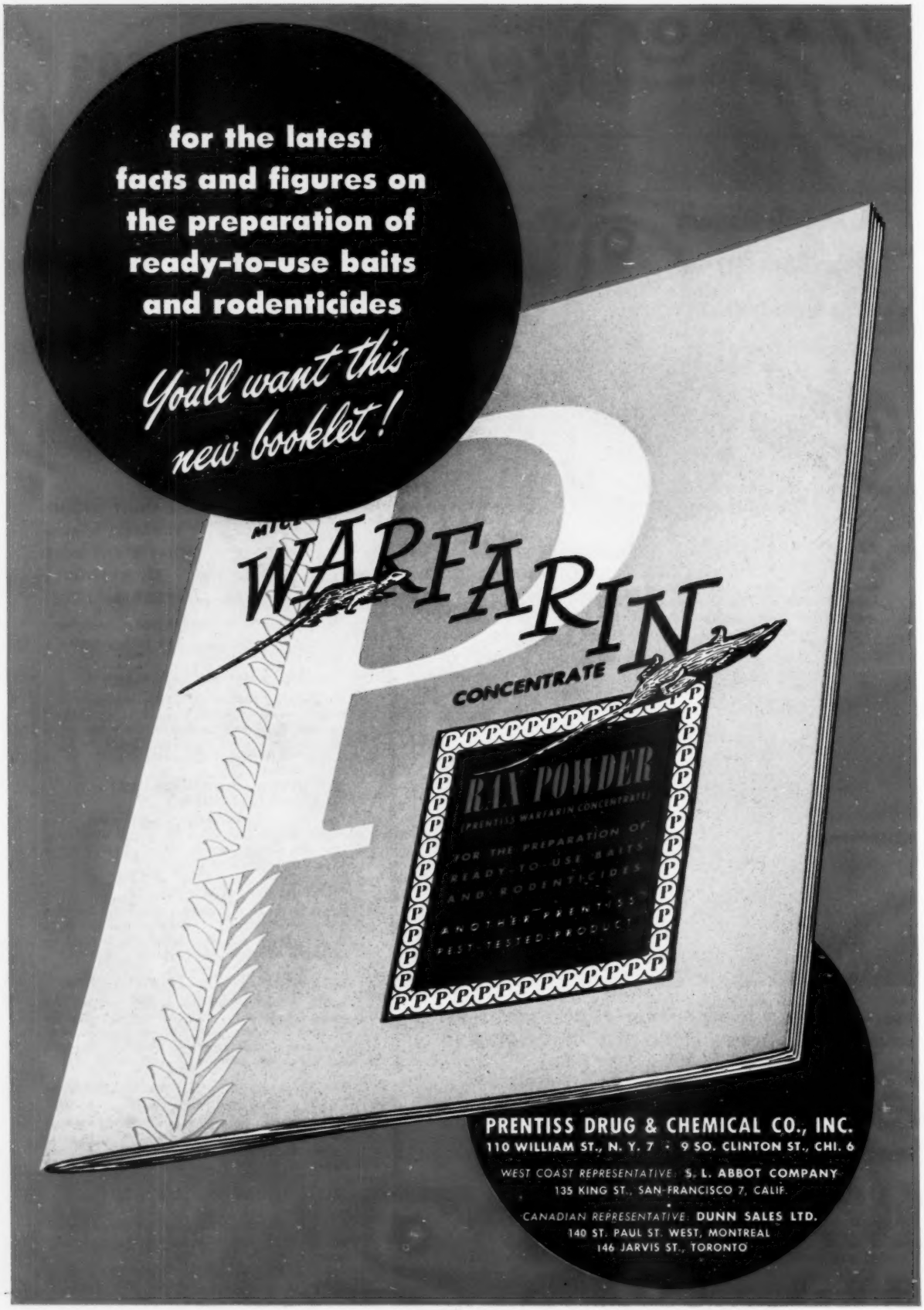
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Slants on a new problem for TOs:

Termite Control in Slab-Type Construction[1]

By MYRON K. SMITH
Hill-Smith Termite System, Memphis, Tenn.

ARCHITECTS, contractors and builders have for several years been constructing residences as well as commercial buildings with concrete slab floors. From a construction standpoint these residences offer many advantages over the conventional floor joist type of building. Slab construction is not limited to the less expensive home. Many homes, costing up to one hundred thousand dollars, are constructed on concrete slabs. A number of these homes do not have the first floor at grade level, and we have seen many where the fill may be as deep as four feet. Contrary to earlier beliefs, termite problems do exist if cellulose containing materials are a part of the building or if they are stored there.

[1]Based on a talk given at 1951 NPCA Convention's excellent termite session, moderated by David P. McAlindin, Royal Exterminators, Newark, N. J.

Slabs More Termite Resistant

It is not our intention to discuss the merits or demerits of this type building, but our studies show that slabs are more termite resistant than conventional construction. Of those residences in the Memphis area, constructed since 1938, more than 75% of the conventional type construction has developed a termite problem. Less than 50% of the slab construction during the same period developed a known termite infestation. This does not infer however, that slab houses may not have hidden termite problems as yet undiscovered.

Since such a large percentage of residences being built today are slabs, a large volume of our future business will be from this source.

Inspection of slab construction for termite infestation often reveals termite activity only in super-structure such as ceiling joists, window casing, door jambs and roof rafters. In conventional construction it is usually foundation timbers on the first floor which show the first sign.

Termites Have Entry Pattern

There is generally a pattern with each type of slab whereby termites gain access to the woodwork of the building. Usual hazards which accompany this construction are expansion joints, precast door or window lintels, air space behind brick veneer, shrinkage of concrete around plumbing, grade stakes left within the slab and shrinkage cracks which develop between concrete pours. If cracks develop in the floor from settling there is no definite pattern. Considering a slab building as a large dirt filled porch, we immediately form a better picture of the problem.

Figures 1 and 2 illustrate two of the greatest termite control hazards we have encountered. These photos were taken of a slab building during construction.

From these illustrations we can see that any chemical treatment to control termites must be applied under the concrete floor. It is also necessary as shown in figure 1 that treatment must be made in the void space between

Fig. 1 In non-floating slab construction, illustrated above, termite problems may develop in exterior walls. It is important to treat void space between masonry foundation and brick veneer wall before the latter is built.

Fig. 2. Favorite termite entry points in monolithic and non-floating type construction are shown below. Termites can easily penetrate floor cracks such as indicated in photograph by white chalk arrows.

masonry foundation and brick veneer wall yet to be built.

Beware Of Moisture Proofing

Several years ago when termites first developed in hardwood flooring laid over a concrete base, standard procedure was to drill numerous holes through the wood floor and lightly flood the area between wood floor and concrete. It develops, however, that moisture proofing compounds such as tar, pitch, and asphalt are often applied over the top of the concrete floor. In this event the oil carrier for termite chemicals used may cause discoloration of hardwood flooring from tar compounds in solution. On the other hand when water soluble chemicals are used to flood over this slab there is risk of buckling the wood floor from moisture.

Three Classes Of Slabs

There are three general classes of slab construction; the non-floating slab, monolithic foundation and slab and the floating slab (see figures 3, 4 and 5, respectively). There are variations to all types and their exact construction will determine the treating methods which apply on each job. Variations include additional supports under the slab, such as concrete posts, structural or reinforcing steel within that slab and pre-formed concrete beams.

Floating Slab Separate Unit

The term floating slab indicates that the slab is not supported by the outside foundation wall, but is a separate unit. It may or may not have concrete beams, piers, or structural steel within, but in most cases will have wire mesh. In this case termites generally gain access to the woodwork by penetrating the crack between foundation wall and slab. There may be an expansion joint of impregnated cellotex or pitch around the edge. Most frequently buildings with floating slabs develop a termite problem in the perimeter areas. In such cases operators can decide whether or not a complete treatment shall be given, or if a treatment of the perimeter area will in itself afford the necessary control. If perimeter control is feasible the shoe mold and/or baseboard can be removed and treatment applied through the expansion joint or crack, which may be enlarged, between slab and foundation wall. This should be effective if the foundation wall is monolithic and has not cracked in some hidden area.

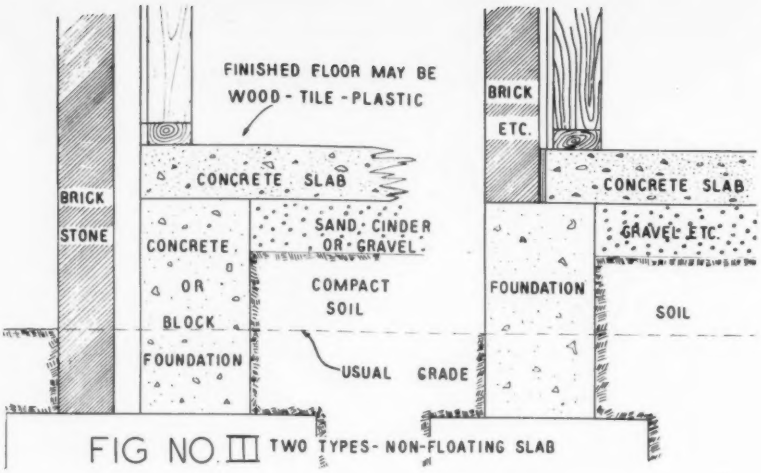


FIG NO. III TWO TYPES - NON-FLOATING SLAB

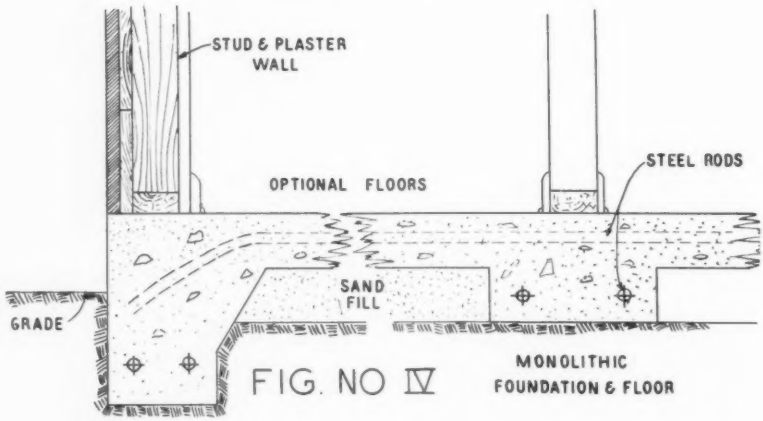


FIG. NO IV MONOLITHIC FOUNDATION & FLOOR

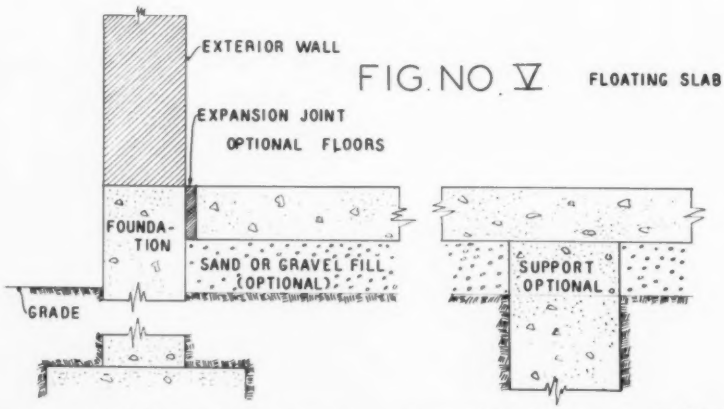
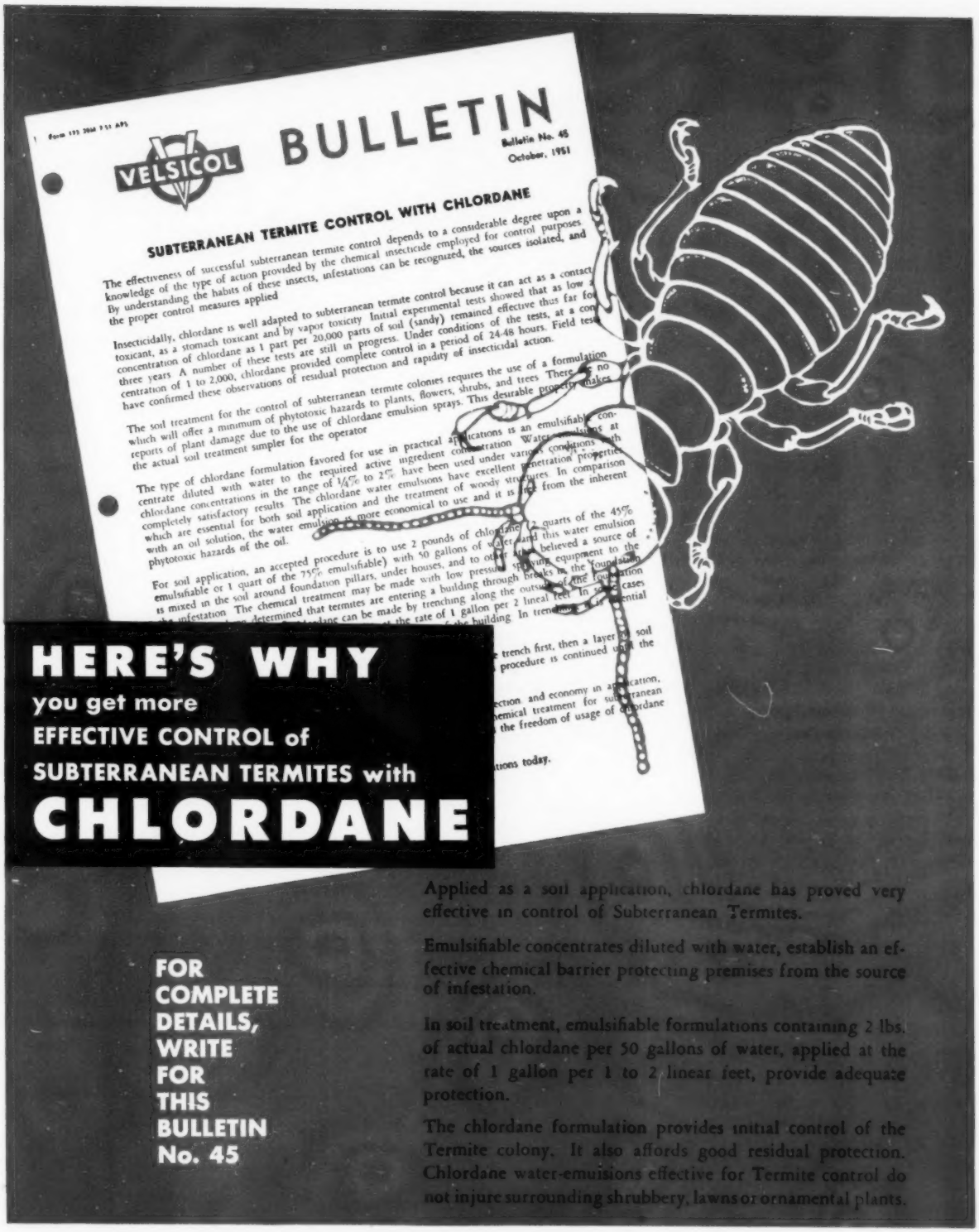


FIG. NO. V FLOATING SLAB

Monolithic Construction Common In Light Construction

The type of concrete slab construction indicated in figure 4 is accomplished by one continuous pour of concrete making foundation, beams and floor a monolithic unit. It is generally used for lighter types of construction such as garages, summer cottages and cabins. Termite entry problems in this case are either through cracks which develop in the floor or from the soil immediately outside the building.

Figures 1 and 3 illustrate typi-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Applied as a soil application, chlordane has proved very effective in control of Subterranean Termites.
Emulsifiable concentrates diluted with water, establish an effective chemical barrier protecting premises from the source of infestation.
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cal examples of non-floating type slab. It is supported on the foundation wall as well as on piers scattered throughout the fill area. This type will usually develop termite problems in the exterior walls or cracks of the slab as shown in fig. 2. Frequently, termites gain access to interior partitions from cracks around plumbing or similar openings in the floor.

Excavation of tunnels under floor is not recommended. In treating sand, cinder or gravel fill some material should be used which will either completely coat the outside of each grain of sand or gravel or else fill up the air space in this fill with a toxic vapor. This would provide a continuous chemical barrier. In four inches of filled sand as used under these slab floors on a 1000 square foot building there will be over 100 cu. ft. of air space. A fumigant or an emulsion type of chemical is preferred. Temperature of the fill will influence the choice of fumigant.

Standard water solutions of toxics do not normally have sufficient lateral spread to be effective unless large quantities are used. If oil base toxics are used under the floor there is a possibility of injury to floor covering from oil material creeping upward through the concrete slab. Generally if a water-proofing membrane is present under the slab, this damage from oil will not occur.

Horizontal Treating

If treatment through the floor is not permissible, holes may be drilled horizontally through foundation walls. Grouting rods may be driven into the fill and slowly withdrawn as the toxic is applied. Horizontal treating should be done as near the top of the fill as practicable. General recommendation for spacing of the drill holes would be approximately four foot centers whether in the slab or the foundation wall.

Some of the earlier construction does not have a gravel or sand bed beneath the slab and in this case it is necessary to use considerable pressure to aid in distribution of the chemical. If a wood floor is present over the slab floor a one inch hole may be drilled through the wood floor and a smaller hole drilled through the concrete floor. A short piece of rubber hose inserted into the concrete floor or a wood dowel driven into the concrete floor with a small hole drilled through it serves as an excellent pressure fitting for the standard tapered nozzle.

Hardwood floors may be repaired by using a standard size wood dowel of the same wood as the floor and finished as the floor. While this type of floor repair is not unsightly some customers may object to its use. In this case, since we are forcing the chemical under the concrete floor, we can usually place our holes inconspicuously.

If the hollow block foundation wall as shown in figure 1 is present, it is necessary to treat the voids of this wall, soil under the slab and void space formed by the brick veneer exterior.

Additional Points To Consider

Radiant heat tubes imbedded within concrete or laid in the sand fill beneath offer an additional hazard to termite control operators. To eliminate the hazards of puncturing radiant heat pipes within concrete slabs, use of grouting rods inserted horizontally through the foundation wall will be more satisfactory if there is sufficient clearance outside the building to permit their use.

In some instances cold air returns are present in the fill. These will interfere with grouting rods. Sometimes an inspector can crawl through cold air returns under the floor and gain information as to the source of termite infestation.

If membrane water-proofing is beneath the slab it is necessary that the treatment be actually applied below this membrane. This can be done either by puncturing the membrane from above or applying treatment below it through grouting rods.

Fills frequently contain brickbats, nail kegs, building refuse, stumps and other materials too numerous to mention.

Chemical solutions may leech from under the slab and kill shrubbery or lawn areas.

Residences constructed on two levels invariably present a difficult treatment problem, for in most cases termite problems develop at this step. A separate footing is generally poured to support each level of floor.

Concrete slab construction offers a different set of problems for termite control operators than we have had before. In the treatment of these buildings it is essential to gather as much information about the individual construction of the building as possible. We should consult the architect, builder or contractor for exact details.

They're Only Termites

By E. Graywood Smyth, Pest Control Counsellor

Dedicated to Packard Termite Control, Los Angeles, California

If someone taps upon your door,
Your termite problem to explore,
    You fasten him with withering eye,
    And tell him: "Best be getting by!"
You have no termites.

You feel so sure, down in your heart,
No house of yours could fall apart
    From damage just from little bugs.
    You watch things, even under rugs.
Why fear for termites?

But four years later, when you scout
Down in your basement, to find out
    Just how your wine is, near the walls
    You find wood powder, where it falls:
It came from termites.

You're stricken with a sudden fear
That some calamity is near.
    A call for help is sure to follow.
    He taps the beams and finds them hollow.
They're full of termites.

The news you get is very sad.
Your whole foundation now is bad.
    The job, complete, if you restore,
    Will cost five hundred now, or more.
That much for termites!

And yet you know it must be done.
The prospect isn't any fun.
    If you had followed his advice
    Four years ago, one tenth the price
Had cured your termites.

And so man learns! Most trouble springs
From just such small, insidious things.
    Your termite, tiny as a louse,
    In numbers can consume a house.
Watch out for termites!

Hermosa Beach, Calif.
August 19, 1951.

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Myron K. Smith

. . . author of the foregoing article on termite control in slab-type construction, holds a master's degree in entomology from Ohio State University, studying under Dr. Frank Campbell. He served as chairman of the southeastern committee working on "Approved References For Termite Control" a National Pest Control Association publication. Smith has also had wide practical experience dealing with termite problems in newer types of building construction.

For control of roaches, ants, silver fish, red spiders and similar insects—ISOTOX Insecticides are applied by compressed air-type of equipment which forces Lindane directly into warm breeding areas, cracks, crevices, corners and hiding places. This system is preferred by many operators.

(Right) For control of clothes moths, carpet beetles and similar insects. Treat infested areas or areas where larvae are found. Aerosol equipment such as HI-FOG is extensively used for direct application as a space spray in hotels, theaters, homes and similar structures.

Only ISOTOX *INSECTICIDES containing* Lindane*

meet so many of your needs—so effectively

SPECIAL ADVANTAGES FOR P.C.O.'S

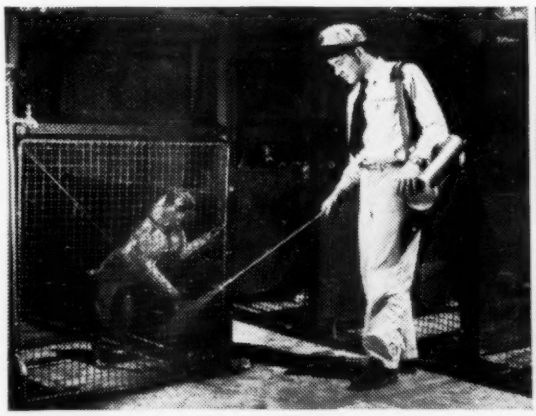
1. High potency, rapid action—and 3-way kill of pests (contact, stomach poison and vapor action). Lindane's high potency is approximately 10 times that of DDT, which means that lower dosage can be used.

2. Kills a wide range of insects, including clothes moths, carpet beetles, fleas, bedbugs, silver fish, house spiders, gnats, termites, powder post beetles, crab lice, human lice, flies, ants, roaches, earwigs, mosquitoes, lice.

3. Pleasant to use and practically odorless. Operators like to work with these insecticides.

4. Conveniently formulated for pest control operations.

Available in wettable powder, emulsive liquid or dust formulations.



For general purpose insect control in kennels. Lindane's residual qualities make it especially suitable for flea and tick control—also for control of flies, mosquitoes, ants and ticks in kennels and farm buildings. Dr. R. A. Fulton and associates, working at Beltsville, Maryland, in the U. S. D. A., found that minute traces of Lindane vapors resulted in effective control (JOURN. ECON. ENT., April, 1950).

For control of fleas, bedbugs, lice, clothes moths and similar pests. Lindane gives best results when applied directly to cracks, crevices, bedsteads, sofas, mattresses, boxes or other typical hidden places — under furniture, margins of carpet, closets, shelves, trunks.

*Approved name for the 99%+ "Pure Gamma Isomer" of Benzene Hexachloride.

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World Leader in Scientific Pest Control

What termite operators must consider when fulfilling a

government bid

By J. Wilfred Gunn
Hollywood Termite Control, Los Angeles, Calif.

Note: Specific references in this report deal with the United States Navy. Rules of procedure for all of the armed services are very similar.

THOUSANDS of millions of dollars will be expended by the government in its defense effort. Termite and dry rot work is included in the total.

The country is divided by the military into districts which are classified as Navy District, Army District, etc. It is a requirement of law that work for which bids are required be published by the district desiring these goods or services. Bulletin boards are set up in the public works offices of the various districts. Here appears all the work on which the district requires bids. Larger cities in these districts usually have trade journals which publish at regular intervals pertinent information concerning requirements of the various agencies. These periodicals can be subscribed to at a very nominal price. PCOs close to the public works office of the district can check the bulletin boards at regular intervals to determine whether or not there is any work on which they wish to bid.

Plans and specifications are available at the districts. The Navy always requires a deposit on plans, which deposit is returnable when the plans are returned. Other agencies of the government do not always require deposit on plans and specifications.

Know Your Bonding Capacity

It is essential to determine in advance of bidding what your bonding capacity is. All public work is required by law to be bonded. Your bonding capacity is determined in two ways—first, by your financial statement, which must be submitted to a bonding company. On the basis of your statement, the bonding company will determine how far they will go in guaranteeing performance of any job which you may contract for. The other item of bonding, equally as important as your financial ability, is experience. If the work which you propose to bid on is of a type similar to the work you are accustomed to doing, you will have no difficulty in getting the maximum bonding amount justified by your financial statement.

Public works jobs are frequently beyond the financial ability of an individual PCO. When such a job comes up, it is often possible for two or more PCO's to bid on the job together. This practice is known as a "joint venture". Care should be exercised to see that state laws do or do not require a new license for joint venture. Most states do have this requirement. Joint venture licenses are issued automatically when both contractors are properly licensed.

Fig. 1. Typical problem encountered in government termite work. This is exterior view of a barracks shower room wall. Whitish streak on one piece of diagonal sheeting is actually infestation of dry-wood termites. Rot in this wall is severe and has extended above the top of tiles on other side of the wall.

Assuming that the plans and specifications are at hand and that you have carefully examined the site on which the work is to be done, the next operation is the preparation of the estimate. You should use a check chart or building estimate summary. A building estimate summary is one of the most essential requirements in estimating as it provides a check list of the various trades involved and tends to eliminate omissions. Nothing is worse than waking up to the realization, when you have been awarded a contract, that one or two of the most

1. From a talk given before the termite session of 1951 National Pest Control Association Convention.

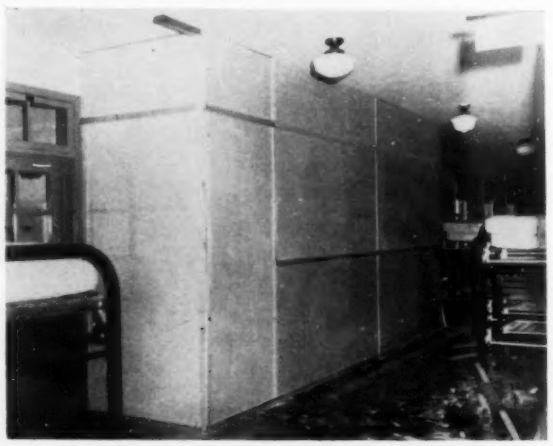
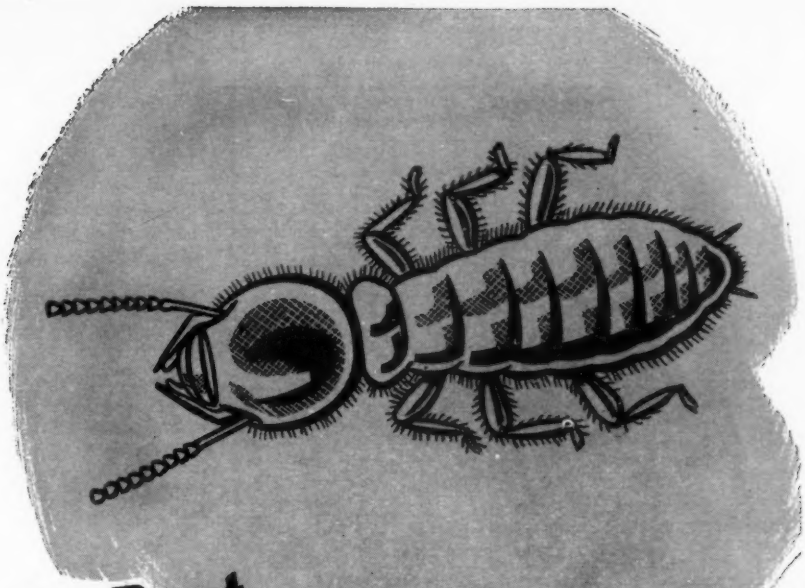
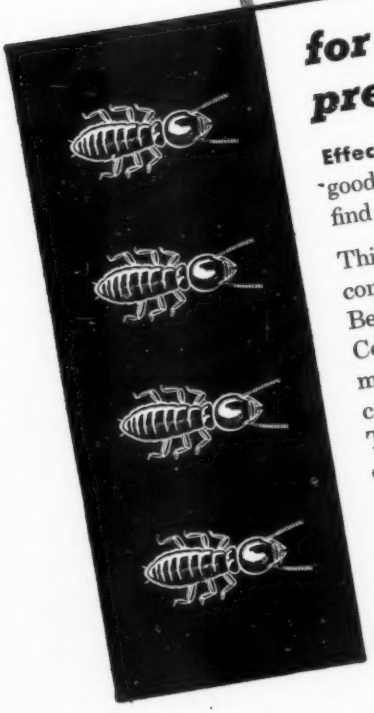


Fig. 2. Dustproof enclosure being built to cover part of termite infested barracks. Note batts nailed over joints. Bats hold the sheet rock in place during construction period, and when removed it is easy to salvage sheet rock for future use.

BETTER TERMITE CONTROL with Du Pont SOIL COMPOUND NC





for corrective and preventive treatments

Effective, economical, convenient to use—three good reasons why every pest-control operator will find Du Pont Soil Compound NC so valuable.

This soil poison gives longer and greater termite control than is usually expected of a soil treatment. Because it is applied dissolved in oil, Du Pont Soil Compound NC does not leach or seep with intermittent rainfall. Used crankcase oil is an excellent carrier, but kerosene or fuel oil is also satisfactory. To give effective control, only four ounces of this compound are required per cubic foot of soil.

Find out how Du Pont Soil Compound NC can add to the effectiveness of your termite-control technique. Write today for detailed information. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington 98, Delaware.

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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

BUILDING ESTIMATE SUMMARY

Building ..... Source ..... Estimate No. .....
Location ..... Size ..... Date .....
Owner ..... Floor Area ..... Listed By .....
Architect ..... Cube ..... Checked By .....

ITEM	CLASS OF WORK	AMOUNT	ITEM	CLASS OF WORK	AMOUNT
300	Temporary Construction		515	Ventilating	
305	Wrecking and Clearing		520	Refrigeration	
310	Excavation		525	Electric Wiring	
315	Piles		530	Light Fixtures	
320	Safety Treads		535	Sidewalk Lights	
325	Concrete		540	Sprinklers	
330	Formwork		545	Elevators	
335	Reinforcing Steel		550	Metal Cabinets & Lockers	
340	Cement Work		555	Floor Coverings	
345	Structural Steel		560	Shades - Blinds - Screens	
350	Masonry		565	Boilers - Tanks - Stacks	
355	Cut Stone Work		570	Pneumatic System	
360	Artificial Stone		575	Vacuum System	
365	Arch Terra Cotta		580	Fencing	
370	Rough Hardware		585	Incinerator	
375	Rough Carpentry		590	Drainage	
380	Misc. Ironwork		595	Railroad Tracks	
385	Ornamental Metal		600	Paving	
390	Sheet Metal Work		605		
395	Metal Windows		610		
400	Metal Doors		615		
405	Metal Partitions		620		
410	Kalamein Work		625		
415	Tin Clad Doors		630		
420	Rolling Shutters		635		
425	Waterproofing		640	Contingencies	
430	Insulation		645		
435	Lathing		650	Testing	
440	Plastering		655		
445	Millwork		660	Transportation	
450	Wood Flooring		665	Supervision	
455	Finish Hardware		670	Cleanup	
460	Composition Roofing		675	Small Tools	
465	Tile Roofing		680	Equipment Rental	
470	Glass and Glazing		685	Permits	
475	Painting		690	Insurance	
480	Decorating			Total Cost	
485	Marble and Tile		695	Margin and Fee	
490	Terrazzo		700	Bond	
495	Mail Chute				
500	Vault Doors			Amount of Bid	
505	Plumbing				
510	Heating				

Sample "Building Estimate Summary" sheet.

important items have been left out of the estimate.

Check Specifications List

The first procedure in estimating is to read the specifications. Do this with the building estimate summary at hand. Each trade or item which is called for in the specifications should be indicated with a check mark on the building estimate summary. In this way, as the bid is assembled, you can determine whether or not all of the elements of the job are included in the final estimate.

After you have completely read the specifications and noted the various requirements on the building estimate summary, you will be in a position to determine which trades will make up the estimate which you yourself are not in a position to perform. This group of trades will comprise the sub-contractors. Prepare a list of at least three sub-contractors for each trade and invite them to submit bids. This can be done on postal cards and should give the date on which the bids are to be in your office, usually two or three days before your bid is due, and the address at which the prospective bidders can examine the plans.

If the job is out of the city from which you are bidding, it often is helpful if you can answer the many questions that the sub-contractors will ask. It is always advisable to get bids from sub-contractors in the locale where the project is to be done. This, however, is not always possible.

There will be many items on the building estimate summary which you will do with your own crews. These items will include, repairs and replacement, demolition, temporary construction such as dustproof enclosures, scaffolds and can also include such items as concrete, excavation, form work and many related items. One item that would normally be in your summary is "treating".

All Items Estimated At Cost

All estimating of items to be done by your organization should be worked out on a cost basis. For instance, under carpentry work, you should determine the exact amount of material which goes to make up the item and then add to that labor. A good rule of thumb for checking costs is that labor will normally be equal to material costs.

After you have completed all items both of work which you will bid and sub-contractors, you are ready to consider your overhead expense. This entails a few important items. Transportation is the cost of moving on and off the job. Supervision is the cost of maintaining a foreman on the job at all times. This is a requirement of the public works office. You will be required to designate to the officer in charge of construction, a man acceptable to him, who will supervise the work. Cleanup can be an important item on the job. The public works officer will require that the job be maintained in a neat manner at all times. Small tools are expendable items such as brooms, shovels, picks, etc. which wear out or are readily stolen. Equipment rental can be a very important factor and should be carefully studied. It is customary to allow between 3% and 5% of your estimated costs of the contract as an equipment rental fee unless there are some unusual circumstances which would increase equipment rental costs out of normal proportion.

If the job is away from your home office, and your superintendent is a regular employee, you will have to make an allowance for subsistence. This will include room and board. If all the work which you are performing is to be performed by your own crews and the work is away from your home office, you will have to allow for subsistence for all your men. It is normally possible to employ local men to do this work and if you have a good superintendent, you should be able to accomplish the job with local help. It is frequently stated that the men you hire outside of your regular crews are not efficient. There is a rule of thumb in the construction industry that a given number of men will turn out the same amount of work if they are properly supervised. I have found this to be true hundreds of times. The remaining items to be added are office overhead and profit. These, you can easily determine. Bond cost will be 1% of the bid.

Bid Publicly Opened

Bids on this type of work are publicly opened and read on specified dates. Assuming that you are low bidder on a particular job, the commanding officer of the district will issue an order to proceed, usually within 30 days of the bid opening. It may be two or three months before the contract is delivered. When your notice to proceed is received, it will state when the work is to be started. It is important to check with the resident officer in charge of construction immediately, as your time limit and possible penalties will be effected by the date of the order to proceed.

Security regulations require that all employees

Rice Weevil

Buffalo Gnat

Fruit Fly

Silverfish

Angoumois Grain Moth

U.S.I.

Drugstore Beetle

Mediterranean Flour Moth

Polistes Wasp

Spider Beetle

Housefly

Cigarette Beetle

Dark Meal Worm

Pyrenone* kills 'em all

Saboteurs like these are continually at work—devouring, spoiling and contaminating food and annoying workers—wherever food products are stored, processed or handled. But fast, effective, economical control of these and a wide variety of other insects is possible now with Pyrenone* insecticides.

Versatile Pyrenone is being used as a base for oil-type, emulsion, or wettable-powder sprays . . . aerosols . . . and many specialty insecticides. They're doing an important job in the present national emergency protecting food and food products against insect damage.

Make sure the sprays and dusts you use—both residual and space sprays – are based on Pyrenone. Pyrenone presents no hazards to your employees or products.

*Pyrenone is a registered trade mark of U. S. Industrial Chemicals Co. Division of National Distillers Products Corporation, 60 East 42nd Street, New York 17, N. Y. Branches in principal cities. In Canada: Natural Products Corporation, 738 Marin Avenue, Montreal.

Pyrenone*

Cadelle

Little Black Ant

Rust-Red Flour Beetle

Cheese Skipper

Scorpion

Confused Flour Beetle

Clover Mite

Mosquito

Bald-Faced Hornet

Saw-Toothed Grain Beetle

German Cockroach

U.S.I.

American Cockroach

Oriental Cockroach

Granary Weevil

Chocolate Moth

Grain Mite

must be American citizens, and that their names and social security numbers must be cleared with the security officer. Arrangements must be made for passes for these men, as well as passes for your own trucks moving in with equipment and material. It is relatively easy to bring things on the base but a written order from the chief inspector is necessary to remove either material or equipment from the property.

You will be required to file a schedule on prices and have this approved by the resident officer in charge of construction. The schedule of prices will be the important items, as far as cost is concerned, listed on your building estimate summary. Overhead items, profit items and bonding expense will be pro-rated into these various items listed on the schedule price list.

Bills are presented on a specified date in the month. If these bills are not in the hands of the auditors on the dead line date, they will be carried over for an extra 30 days, before payment is made. It is customary that an amount equal to 10% of the work completed is retained until 35 days after the work has been completed and accepted.

Plan Work Properly

Expediting is extremely important. There are two factors involved. One is the actual physical expediting of the contract under the direct supervision of your superintendent. Assuming the man in charge is thoroughly qualified, there should be no problem on that score. Where a number of trades are involved, it is important that the superintendent anticipate the dates on which he will need these various trades, as far ahead as possible. Unless your sub-contractors are warned, they may not be in a position to furnish labor on the dates that you want them. We have found that it is well to have a clause in our contract with any sub-contractor giving us the privilege of doing his work if he fails to show up beyond a specified number of days, after written notice. When this has to be done, naturally the contract would require that the sub-contractor bear the expense.

Cost Accounting

The other part of the expediting is the cost accounting. Each item in your building estimate summary should be numbered. These numbers are used throughout the job and can be set up very handily on a columnar pad, using each column to represent one week's expenses.

Some form of purchase order and requisition system will have to be installed to correlate the costs as well as some form of time keeping set-up. We must assume that you are familiar with these procedures as they are basic.

Extras are handled on a negotiated basis. After you have worked out a cost on an extra item and have satisfied the resident officer in charge of construction that your estimate and his are comparable, you will be given an order to proceed in a manner similar to the original order to proceed.

Payment On Monthly Basis

Payments are made on a monthly work completed basis. The system is cumbersome but simple. If you expect reasonably prompt payments, bills must be presented in a manner which will be immediately approved. We have found that it is always best to underestimate the amount of work completed by a few percentage points as this will get more ready approval from the inspector. Assuming that the deadline is the 20th of the month, you can expect your check around the 20th of the following month, if everything is in order. This means simply that by the time you get a check, another month is ready to be billed and you are actually financing two months of work. You will be fortunate to make any better time than this on collections.

Two things should be pointed out about relations with your sub-contractors. It is reasonable to assume that your sub-contractor is going to make a profit on his part of the work. For this reason, he has every right to wait for his money until you get yours. However, he should not be required to wait any longer. When payments are received, you should pay your sub-contractors immediately, withholding only the same percentage from his bill which the government is holding from your overall bill.

The other point has to do with sub-contractors' payrolls. The courts have held that on public work, the prime contractor is responsible for the failure of the sub-contractor to pay payroll taxes. Before making the final payment to the sub-contractor, you should check with your bonding company to determine whether or not any tax liens have been filed against him on your work.

It is our job to see to it that we get our fair share of the defense termite, dry rot repair work and treating.

Texans Plan Whoopee For NPCA

Although October 1952 may seem a long way off on your calendar, planning committees for this year's gala 20th annual National Pest Control Association Convention in Houston, Texas are already being formed.

Rumors are that PCOs from this year's host state are planning a real western welcome for "foreigners" from outside Texas. Arden W. Price, W. B. McCloud & Co., Chicago, has already been named general chairman, and H. O. Abel, Abel Exterminating Co., Houston, will serve as local chairman.

A Section of PEST CONTROL magazine

TERMITES

and other enemies of wood

Since this issue is almost completely devoted to termite control problems, "Termites and other enemies of wood", a monthly feature of PEST CONTROL magazine, does not appear in our February number. It will resume its regular place in our March, 1952 issue.

Sparrows Flee Light

Rockford, Ill. solved its sparrow problem accidentally after it had worked out complicated schemes to kill or rout the birds.

When the city installed mercury lights in the downtown district, the birds fled.

Experts said the mercury lights "may give off a disturbing sound," pitched so high it is inaudible to human ears, but annoying to the sparrows.

Buy All Your
PEST CONTROL CHEMICALS FROM ONE CONVENIENT SOURCE

with NATION WIDE STRATEGICALLY LOCATED WAREHOUSES

To Serve You... Wherever You Are

TERRATOX 255 CONCENTRATE
40% PENTA concentrate... dilutes 1 to 10 with light petroleum solvents to make 11 gallons of 5% PENTA ready-to-use solution.

TERRATOX 235 CONCENTRATE
20% PENTA concentrate... dilutes 1 to 4 with deodorized light petroleum solvent to make 5 gallons of 5% PENTA ready-to-use solution. Practically odorless and has deodorant added.

TERRATOX 218 CONCENTRATE
Water soluable Pyroarsenate and Dichromate... dilutes 1 pound of dry chemical to 3 gallons of water. For use where foodstuffs are stored which easily absorb odors.

CHECKPEST ROACH SPRAY CONCENTRATE
Dilutes at the rate of 1 part with 19 parts of deodorized oil to make a finished insect spray. Ideal for homes, restaurants, food storage warehouses and flour mills without leaving poisonous residues.

CHECKPEST C-75 CONCENTRATE
8 pound Technical Chlordane solution... dilutes 1 to 46 with water or 1 to 59 with deodorized kerosene. Ideal for household pests and garden insects.

CHECKPEST C-46 CONCENTRATE
4 pound refined Chlordane solution... dilutes 1 to 23 with water or 1 to 29 with deodorized kerosene. Minimum odor and cleanliness for inside use.

CHECKPEST B-20 CONCENTRATE
20% Refined BHC (Lindane)...dilutes 1 to 40 with water. Approved by U. S. D. A. for fly control in dairy barns and food plants. Dilutes 1 to 52 with deodorized kerosene.

CHECKPEST D-25 CONCENTRATE
25% DDT, Kerosene Solvent... dilutes 1 to 4 with water or 1 to 5 with deodorized kerosene. General insecticide for basement and outside use.

WOOD TREATING

WOOD-TREATING Chemicals Co.
5137 Southwest Ave.
St. Louis 10, Mo.

Tests with new insecticides for termite control

by

R. A. ST. GEORGE

Entomologist, Forest Insect Investigations
U. S. Department of Agriculture
Beltsville, Maryland

SINCE WORLD WAR II an ever-increasing number of new insecticides have appeared on the market. In order to evaluate their effectiveness against termites, it has been necessary to devise a simple means of testing them. A method for the rapid screening of these chemicals was developed at Gulfport, Mississippi, in 1946. This method, now known as the platform test, consists in removing the ground cover from an area 2 feet square and applying a measured amount of insecticide to the soil surface with a garden sprinkling can. A low dosage of 1/4 to 1 pint per square foot of soil surface is used in order to obtain an early indication of failure. This is about half the rate employed in the initial stake tests. After the chemical has been applied, a pine board 1 foot square is laid down in the center of the plot, so that a margin of poisoned soil is left along the perimeter of the board. This type of test has also served to determine the residual effectiveness of certain insecticides when applied to the ground, but the dosage is increased to 3 pints per square foot. As in the stake tests, all platform tests are replicated 10 times and suitable checks are established in untreated soil.

Among the new insecticides being tested by the Bureau of Entomology and Plant Quarantine are DDT, chlordane, benzene hexachloride, aldrin, and dieldrin. They are being applied in solutions and emulsions, and are being tested alone and in combinations, in different concentrations and rates of application. With the exception of DDT, however, they have been under test only about two years.

Special interest has developed in the use of chlordane as a termite poison, because of its reported nontoxicity to many kinds of plants. At Beltsville chlordane emulsions are being tested by the standardized field procedure at concentrations of 0.125, 0.5, 1, and 2 per cent, applied at the rate of 3.2 pints per cubic foot of soil. After approximately two years all these concentrations appear promising, but the rate of application is rather high. At Gulfport chlordane is being evaluated in both an emulsion and an oil solution, in concentrations of 1 and 2 per cent.

Tests with benzene hexachloride are being made both at Beltsville and at Gulfport. Some of the initial results obtained with it are very promising.

Not only is the effectiveness of chlordane in controlling termites being tested , but also its toxicity to plants when so used. During the summer of 1949 it was applied in heavy dosages to the soil around the base of certain vines, shrubs, and trees at Beltsville. The test was a severe one, the treatments being applied at mid-day during the month of July, when temperatures were in the nineties and the plants were suffering from a prolonged drought. The soil in which they were growing varied from a light sand to a clay loam, and was acid.

The plants included in the test consisted of Boston and English ivy, bush honeysuckle, rhododendron, yew, azalea, Pfitzer and Irish junipers, arborvitae, blue spruce, hemlock, loblolly pine, and nursery stock consisting of black locust, maple, and sycamore seedlings 1 to 5 years old. A 2-percent chlordane emulsion was applied to the soil around each plant at 3.2 and 6.4 pints per square foot. Since the area treated was 6.2 square feet, 2½ and 5 gallons were used per treatment, or 5 and 10 ounces of actual toxic substance. The application was confined to one side of each plant, so as to approximate conditions occurring near the foundations of buildings. After three seasons of observations no injury has been detected.

Further studies of a similar nature are being conducted at Gulfport to determine how close soil treatments be applied to the roots of shrubbery without injuring them. In these tests pentachlorophenol, DDT, and chlordane are being applied as 5-percent solutions in No. 2 fuel oil. The results are being compared with those obtained with similar concentrations of emulsions of DDT and chlordane.

Certain studies on the use of chlordane about the roots of plants are being conducted in cooperation with the National Pest Control Association. A 2-percent emulsion has been applied to the soil about the foundations of buildings. Dosages used have been ½ gallon of the emulsion per lineal foot of shallow trench adjacent to partially excavated areas and 1 gallon per foot next to walls having full basements. This treatment has proved effective against termites for about three years, during which time there has been no plant injury.

The phytotoxicity problem of soil poisons used in termite control warrants consideration by all termite operators. In going about your work it would be helpful if you would observe and record the extent of root development of plants of various kinds. Such knowledge would be useful in estimating the hazards of plant injury by toxic chemicals applied to the soil.

[1]Part of a paper presented at the 19th Annual NPCA convention, Boston, Mass., Oct. 29-31, 1951.

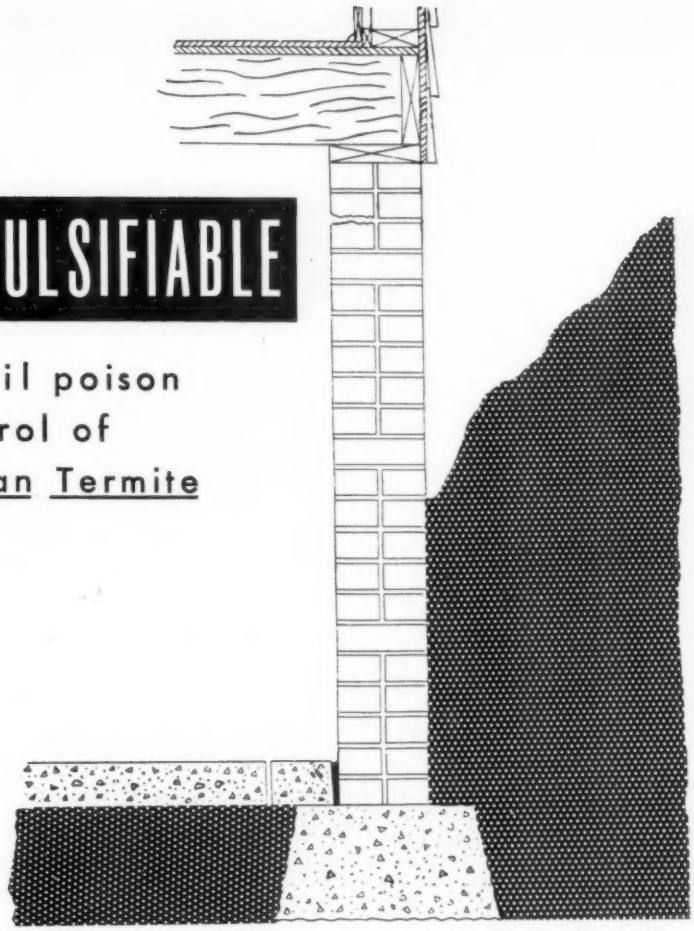
Car Kills Child In DDT Fog

One Charlotte, North Carolina child was killed and another critically injured by a motorist in a DDT fog recently. Police said the children were enveloped in fog, which had been sprayed by a city health department machine across an arterial highway.

The driver was charged with manslaughter.

PENICKLOR 50% EMULSIFIABLE

For use as a soil poison
for the control of
The Subterranean Termite



Its advantages are:

1. Lower cost.
2. Simplicity of use.
3. Safety to roots and plants at recommended dosages.

SOIL PENETRATION IS IMPORTANT!

Soil tends to filter out the emulsified chlordane in quick-breaking emulsions.

Therefore, to insure penetration, use a *stable* emulsion — Penicklor 50% Emulsifiable.

Penicklor 50% Emulsifiable makes a permanently stable emulsion when diluted with water to a 2% strength.

Even a 0.5% emulsion is relatively stable.

NOTE: For gravel and very coarse sand, we suggest Penicklor 50% Wettable Powder.

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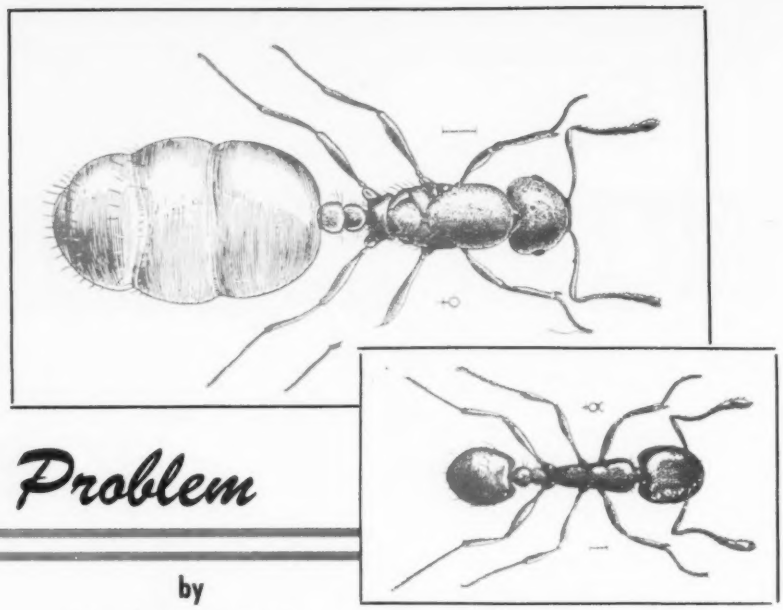
PHARAOH'S ANT



a Special Problem

by

Douglas Burnett, Jr.

Top illustration shows Pharaoh's Ant queen, with greatly enlarged abdomen. Bottom drawing shows worker.

THE YEARBOOK of the Department of Entomology, U. S. Department of Agriculture, 1896, has this to say about the Pharaoh's Ant:

"As a house species, the house ant, Monmorium pharaonis, Linn. is . . . . . often difficult to eradicate. There is no means of doing this except to locate the nest by following the workers back to their point of entrance. If in a wall the inmates may sometimes be reached by injecting bisulphide of carbon or a little kerosene. If under flooring it may be sometimes possible to get at them by taking up a section. Unless the colony can be reached and destroyed all other measures will be of only temporary avail."

The same words appear in the U.S.D.A. Bulletin on House Ants released in 1907. Thus, eleven years later, no new answers had been found. In a U.S.D.A. Farmer's Bulletin released in 1916, gasoline had been added to the method of control. Nothing else was changed.

This attitude pervades the literature written about the Pharaoh's Ant. The fact that the ant is so small, and can almost "filter" through the smallest crack; the fact that it has become as domesticated as the cow or the dog, and is still as independent as the alley cat; the fact that it nests in the wall space where it is economically impossible to root it out and destroy it; all lead to frustration on the part of the householder and the PCO when the problem of eradication or even control presents itself.

Fortunately, since the Farmer's Bulletin of 1916, we have a few more facts at hand; more clues, slim as they are. Coupled with these a new insecticide and some more efficient baits enable us to do a satisfactory job of control, if not of eradication.

Let me give you the background of Pharaoh's Ant. Wheeler, in his excellent book on "Ants"*, classifies the Pharaoh's Ant as follows: *Order*—Hymenoptera, *Family*—Formicidae, *Subfamily* III—Myrmicinae Meyr, *Tribe 2*—Myrmicii *Genus*—Monomorium, *Species*—pharaonis. *Common Name*—Pharaoh's Ant.

A short description of the Pharaoh's Ant is:

Yellowish red, 1/12th to 1/10th inch long. The workers have two segments in the pedicel: antennae elbowed, with three segments in the antennal club. Head and thorax without spines. The body pitted with minute impressions. Nests in foundations and walls of buildings, except in the South, where it nests in the ground as well.

The Pharaoh's Ant apparently originated in Southern Asia, migrating to Europe by way of commerce and shipping. It reached North America in the same manner, either from Asia or Europe. Since it originated in the lush tropics, it requires warmth and moisture to survive and produce. It is also for this reason it has established itself in houses and buildings in the temperate regions. Because of the artificial warmth in the winter, it can forage for food the year round.

The genus Monomorium is not an old one. The oldest fossils so far found are in Baltic amber of the Tertiary Period. The Tertiary Period was from 136 to 116 millions years ago. In contrast to this, cockroaches, certain beetles, centipedes and spiders date from the Carboniferous Period, which ranged from 370 to 250 million years ago.

There are other small, reddish ants which can be confused with the Pharaoh's Ant. If you remember three salient facts; three segments in the antennal club; two segments in the pedicel, and no spines on the head or thorax; if these three things are a description of the specimen you are identifying, you will have little trouble. The body is also pitted with small impressions. It is a slow moving ant.

The colony, unlike many of the species of ants, may contain many queens. The queens are about 1/4 inch long, and look like the workers except for their larger size and distended abdomen. There are two

*Ants, Their Structure, Development and Behavior by William M. Wheeler, Columbia University Press, 1913.

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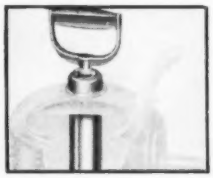

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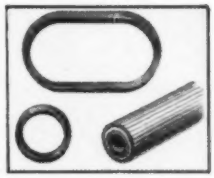

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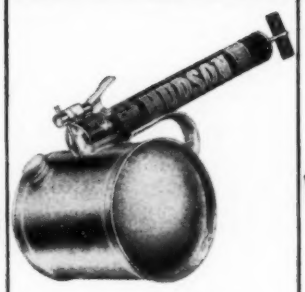

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types of queens produced; one winged and one wingless, hence there is not always a swarming in order to induce mating.

Dead and dying insects probably furnished the original food for ants. In their change from the soil to buildings, the food habits changed also. Fats, sugars and proteins still make up their diet, but they use man's food to obtain them.

Clues To Poison Baits

Fats, proteins and sugars — these are the clues to poison baits. Unfortunately there is no rule which makes the ants accept one or the other in an orderly manner. A colony will avidly eat one for several days, and then suddenly switch to another without reason. As a result, if poisoned baits are used as a means of control, they should be checked every few days, or a preliminary "prebaiting" program should be instituted. Sometimes the placing of several types of baits will give the ants a choice.

Because of the workers ability to detect poisons, thallium, sodium arsenate, and tartar emetic should be used. These have been found to be undetectable to the ants. Of the three, thallium sulphate seems to be the most efficient. I am going to give you several poisoned baits which have proved successful.

The queens and the larvae are fed by the workers. If the poisoned bait is acceptable to the workers, they will carry it to the nest and feed the inmates. This method, then, is effective in destroying the propagators, consequently the colony is destroyed.

In the following baits, the percentage of thallium seems to fluctuate. I know of no reason for this, except that the amount included in the bait was determined by the formulator. Nor do I know the most effective amount of thallium to be used. I presume it is somewhere between ½ and 1 per cent.

At times none of these baits will be acceptable. I know of one instance where the Pharaoh's Ant accepted a brand of chocolate made by one company, refusing another brand which was offered it. When the acceptable brand was presented, along with thallium mixed in, the colony was destroyed.

Some poisoned bait formulas follow:

Sugar Bait

Thallium Sulphate	5.5 grams
Strained Honey	3 ounces
Granulated Sugar	1 pound
Water	1 pint
Benzoate of Soda	0.5 grams

Mix sugar, honey and benzoate of soda in the water. Heat almost to a boil. Add the thallium and stir until dissolved. A variation is to dissolve the thallium in the water first, then add the other ingredients. In either case do not breathe the fumes. They are poisonous. When the mixture cools, there is no danger from the fumes.

Protein Bait

Thallium Sulphate	0.5 grams
Peanut Butter	75 grams
Sweet Chocolate	25 grams

Mix thoroughly

Raisins and Honey Bait

Make a solution of 1½% thallium in water. Soak raisins in the thallium solution for twelve hours. Add a little honey.

Shrimp Bait

Peel raw shrimp and grind fine. Poison with 1% Thallium.

Bacon Bait

Fry out bacon grease over a slow fire. Poison bacon grease with 1% Thallium.

Pound Cake

Poison fresh or stale pound cake with 1% Thallium.

These baits can be put out in a variety of ways — fill drinking straws or put a small quantity in an old, discarded bottle cap.

There are probably more baits and other methods of distribution.

Of all the modern insecticides, chlordane is the most effective when used as a spray. The other insecticides seem to be repellent to the Pharaoh's Ant. Being repellent, the ants by-pass them and so are not affected.

Where To Apply Poisons

For the control of this ant, the following points must be remembered: First, the ant needs warmth. Second, it needs much moisture. Third, the nest will be in the wall or foundation. The kitchen where the stove is next to the sink seems to be the favored spot. Chlordane, either in emulsion or solution, should be used where it will not affect either foods or pets or humans, the concentration can be up to five per cent without being repellent to the ants. A thorough spraying of all cracks, no matter how minute, must be treated. No entrance into the wall space must be overlooked. Such places as light switches, light sockets, pipes entering the walls or floor, cracks over the baseboard and between the baseboard and the floor, faults in tile on the wall, nail holes, cracks in the wooden floor or joints of linoleum must all be sprayed thoroughly. The areas around water should be sprayed completely.

(Continued on page 28)

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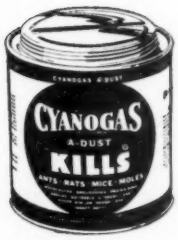

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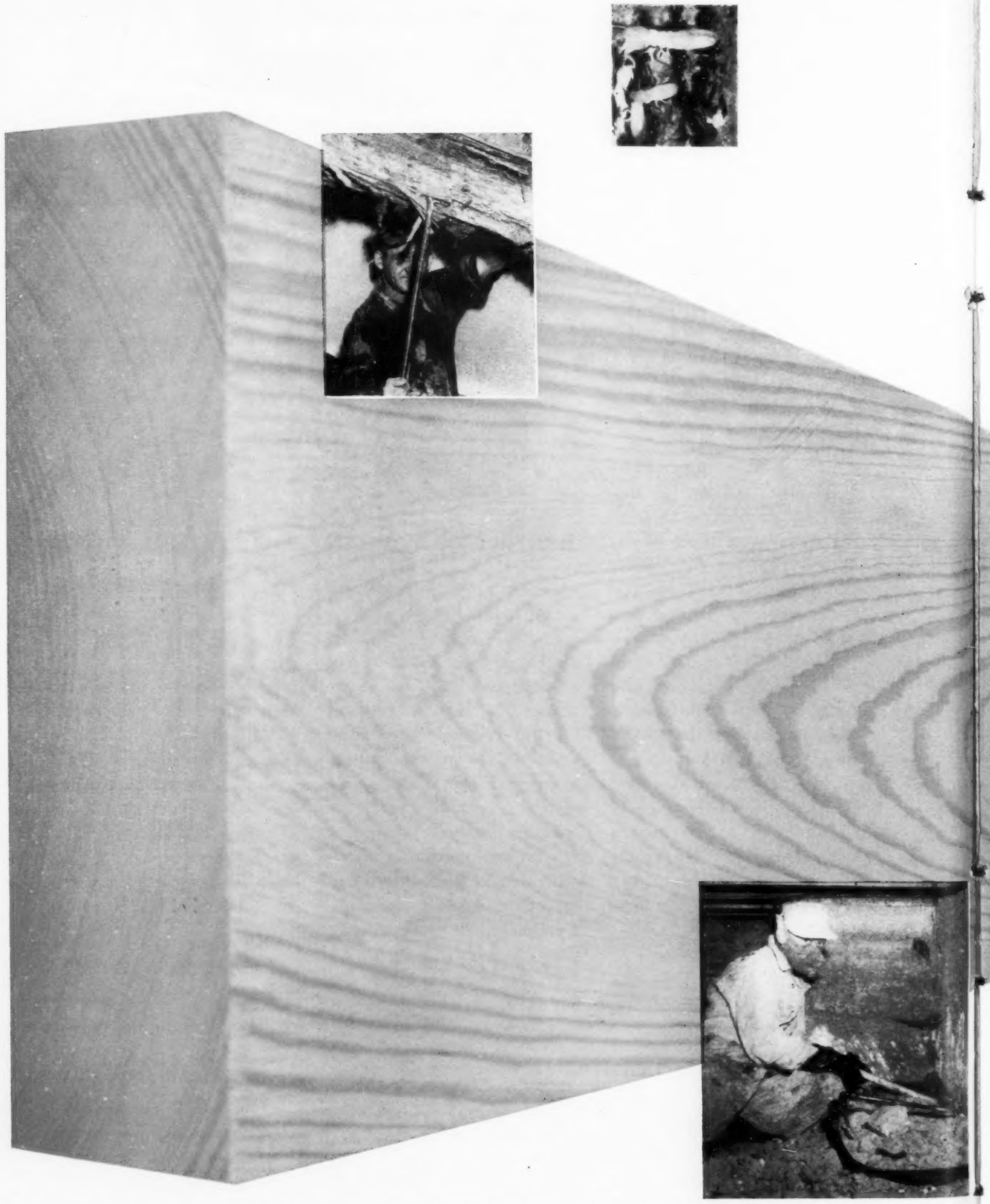

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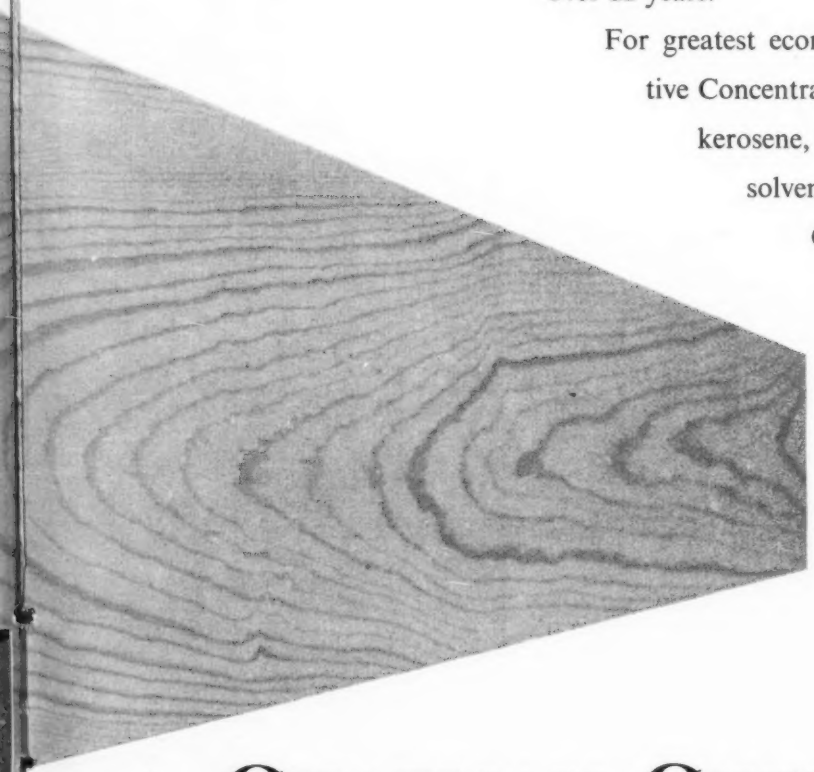

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Pharaoh's Ant

(from page 24)

These areas are sinks, toilets and drains, etc.

I do not know why this treatment is successful. It might be that the colony is so depleted that it dies out. It might be that the workers pick up enough insecticide that they contaminate the nest, thus killing the queens and the larvae.

In the treatment of a building, the kitchen area, the toilet and sink areas, and the warm side of the building should be given special consideration. For instance, many brick homes in Philadelphia which have the living rooms on the east side, through whose windows stream the warm morning sun, will be found to have Pharaoh's Ants around the window sills of the living room; whereas those which face the north or south will have no ants in the living room. This is a matter of personal observation, and so may not always hold true.

This information is no panacea. There is no such thing in the control of the Pharaoh's Ant unless the building is burned down and a new one rebuilt.

There is, however, one more point to be considered. First, when the infestation is in a crowded area, such as a part of the city where row houses predominate, we assume the infestation goes from house to house. This may be true, but it would be wise to investigate the nearest grocery, bakery, or store which supplies all the infested houses. That common source will usually be infested also. Beside doing the neighborhood a service as well as stopping an infestation in the building you are servicing, you might pick up a contract. In other words, the infiltration into the houses might be *brought* in, rather than the ants coming into the buildings themselves.

Elmer B. Schwab

Elmer B. Schwab, head of the Schwab Chemical Co. in Washington, D. C., died of a heart attack recently. He was 54.

Schwab was a veteran of both World Wars. He is survived by his wife and a sister.

patents

RELATING TO PEST CONTROL

By Dr. R. C. Roark
U. S. Department of Agriculture

Copies of all patents can be obtained for 25 cents (no postage) sent to the Patent Office, Washington, D. C. In ordering a copy of a patent the number of the patent, the date, the name of the patentee, and the subject of the invention should be stated.

2,537,022 (Jan. 9, 1951; appl. Jan. 7, 1949). **INSECT REPELLENTS.** Paul D. Bartlett, Weston, Mass., and Abraham Schneider, Philadelphia, Pa. —Secretary of the Army—An insect repellent composition comprises in an inert organic solvent an aldehyde being a member of the group consisting of 2-ethyl-2-(beta-cyanoethyl)-butyraldehyde, 2-ethyl-2-(beta-cyanoethyl) - valeraldehyde, 2-thyl-2-(beta-cyanoethyl)-hexaldehyde.

2,537,023 (Jan. 9, 1951; appl. Jan. 7, 1949). **INSECT REPELLENTS.** Paul D. Bartlett, Weston, Mass., and Abraham Schneider, Philadelphia, Pa.—Secretary of the Army—The patentees claim an insect repellent fabric impregnated with a substance being a member of the group consisting of indanol, acetoxy indanol, and methoxy indanol.

2,537,209 (Jan. 9, 1951; appl. Jan. 2, 1948). **ELECTRICALLY OPERATED TRAP.** Edward C. Conley, Leavenworth, Kans.

2,537,833 (Jan. 9, 1951; appl. Apr. 9, 1947). APPARATUS FOR NEBULIZING LIQUIDS. Bernhard Joos, Schaffhausen, Switzerland — For converting a liquid into a floating mist, a film of the liquid is conveyed to a rotating distributor surface, or a series of such distributor surfaces, which by centrifugal action throw the liquid against disintegrator surfaces supplied with apertures for the passage of the nebulized liquid. This apparatus may be used for making insecticidal aerosols.

2,538,513 (Jan. 16, 1951; appl. Aug. 4, 1949). COMPOSITION FOR CONTROL OF MITE AND INSECT PESTS. Eugene E. Kenaga, Midland, Mich. — The Dow Chemical Company, Midland, Mich.—A composition for the control of mite and insect pests, comprises as active toxic ingredients (1) the 4-chloro-phenyl ester of 4-chlorobenzene sulfonic acids and (2) aldrin, the active toxic ingredients of such composition being mutually activating.

2,538,727 (Jan. 16, 1951; appl. Aug. 4, 1949). COMPOSITION FOR CONTROL OF MITE AND INSECT PESTS. Eugene E. Kenaga, Midland, Mich.—The Dow Chemical Company, Midland, Mich. — A composition for the control of mite and insect pests comprises as active toxic ingredients (1) tetraethyl pyrophosphate and (2) 4'-chlorophenyd 4-chlorobenzene sulfonate, the active toxic ingredients in such composition being mutually activating.

2,538,728 (Jan. 16, 1951; appl. Aug. 4, 1949). COMPOSITION FOR CONTROL OF MITE AND INSECT PESTS. Eugene E. Kenaga, Midland, Mich. — The Dow Chemical Company, Midland, Mich.—A composition for the control of mite and insect pests comprises as active toxic ingredients () DDT and (2) 4-chlorophenyl ester of 4-chlorobenzene sulfonic acid, the active toxic ingredients of such composition being mutually activating.

2,538,729 (Jan. 16, 1951; appl. Aug. 4, 1949). COMPOSITION FOR CONTROL OF MITE AND INSECT PESTS. Eugene E. Kenaga, Midland, Mich. — Tne Dow Chemical Company, Midland, Mich. — A composition for the control of mite and insect petss comprises as active toxic ingredients (1) the 4-chlorophenyl ester of 4-chlorobenzene sulfonic acid and (2) the gamma-isomer of benzene hexachloride, the active toxic ingredients in such composition being mutually activating.

2,538,879 (Jan. 23, 1951; appl. Oct. 15, 1945). APPARATUS FOR SPRAYING TREES. Ralph V. Newcomb and Herbert F. Keeler, Marysville, Calif.—Di Giorgio Fruit Corporation, San Francisco, Calif.

2,538,948 (Jan. 23, 1951; appl. Oct. 24, 1945). **SPRAY DEVICE.** Harry W. Richards, Washington, D. C.

2,539,269 (Jan. 23, 1951; appl. Apr. 23, 1948). **INSECTICIDAL COMPOSITION.** Thaddeus Parr, Philadelphia, Pa. — The Pennsylvania Salt Manufacturing Company, Philadelphia, Pa.—An insecticide composition comprises substantially 34 parts DDT, 31 parts xylene, 34 parts di and tri methylated naphthalenes, 1 part of a dimeric alkylated aryl polyether and 0.02 part of a water-soluble polyvinyl alcohol 86 to 93% hydrolyzed and having a viscosity between 20-25 centipoises in a 4% aqueous solution at 20° C.

2,540,095 (Feb. 6, 1951; appl. Oct. 31, 1947). **VAPOR DISPENSER.** Emil Buehler, North Haledon, N. J. — American Aerovap, Inc., New York, N. Y.—DDT or other insecticide in an aluminum cup is vaporized by electric heat.

2,540,239 (Feb. 6, 1951; appl. Feb. 5, 1945). **INSECTICIDAL PAINT.** Garfield Arthur Bowden, East Orange, N. J., and Carl Iddings, Manhasset, N. Y.—Boyle-Midway Inc., New York N. Y. — This oil type of paint contains small amounts of DDT.

2,540,311 (Feb. 6, 1951; appl. March 26, 1947). MOTHPROOFING COMPOSITION AND THE APPLICATION THEREOF TO FABRICS FROM DRY CLEANERS SOLVENT. Ernst A. Wolff, Plainfield, N. J. — Merck & Co., Inc., Rahway, N. J.— A mothproofing composition adapted for application to fibrous materials from organic solvent solution consists essentially of DDT and about 2 to 15% of its weight of resin plasticizer selected from the class consisting of dibutyl phthalate, tri-o-cresyl phosphate, and methyl abietate as an agent for preventing crystallization of the DDT when the composition is applied to fibrous material.

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PEST CONTROL

notebook

by Norman York

Centipedes—Beneficial Pests

Entomologists will tell you that centipedes are generally beneficial and harmless, but that's not the story you'd get from your next door neighbor's wife. Like as not she'd give you a long account of the day she stood on the couch screaming while a thousand legged worm with big long feelers streaked across her floor, looking like it would devour anything in sight.

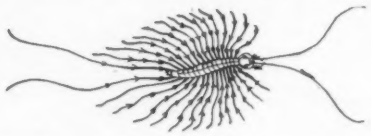
Like most laymen's observations, her description would not be accurate. True centipedes don't have a thousand legs, and the only things they eat are certain insects and spiders. It must be admitted, however, that their looks are against them.

First Cousins Of Insects

Centipedes are the closest relatives of true insects, and belong to the class *Chilopoda*. Their similarities with insects include a single pair of antennae, breathing by tracheae and reproductive organs that open at the posterior end of the body. Their differences are striking and startling, and are responsible for a bad reputation. Bodies are long and worm-like, with distinct segments. A pair of legs is attached to each segment. Fifteen to 23 pairs is common, depending on the species. All centipedes are capable of moving at great speed. Their bodies, however, disintegrate easily when crushed.

House Centipedes Look Dangerous

Perhaps the most dangerous looking centipede of all is the least harmful. *Scutigera forceps*, the house centipede, differs from his brothers in that his many legs are



House Centipede (App. half life size)

almost as long as the body supporting them. Since some house centipedes grow two or three inch bodies, they present a most ferocious appearance when scurrying across floors or dropping unexpectedly from clothing. They have some 15 pairs of legs, the last ones being twice the length of the body in the female. Color is grayish yellow, marked longitudinally on top with three dark stripes. Unlike other species, house centipedes are capable of breeding indoors, and they favor damp, dark places, particularly where materials are stored for long periods of time, or where there is refuse or debris.

House centipedes are not poisonous to man. Like all species, they have a pair of poison claws or legs on the first body segment behind the head, which they use to kill roaches, flies, moths and other small creatures. They rarely attack man, and when a bite is inflicted, the symptoms are not severe. Certain other species, common to the south and southwestern United States, do inflict a painful bite, and there is danger of secondary infection in the wound. Some tropical centipedes are reputed to be extremely poisonous.

Can Be Considered Pests

Because of the fright they cause, centipedes can be considered pests, although they are in no way harmful to stored food products or clothing, and eat considerable numbers of harmful insects. Cleaning up debris around the edges of homes and garages will eliminate potential breeding places of centipedes. If there is any open space beneath porches or beneath the house itself, this too should be cleared. In a heavily infested house, cracks in the basement walls should be plastered up, and damp protected areas dried up or closed off. ¼% lindane or 2% chlordane sprays placed around potential entry points and damp basement areas give good protection. 1% lindane or 5% chlordane dusts can also be used to excellent effect. Pyrethrum sprays will kill centipedes on direct contact, but have little residual action.

Boy Wounded Hunting Rats

Sixteen year old Preston Spicer was wounded recently while gunning for rats in a field near his Scituate, Rhode Island home.

Police said the boy was shooting with a .22 caliber rifle when a bullet ricocheted off a nearby building and struck him in the chest. Hospital authorities said the youth would recover.

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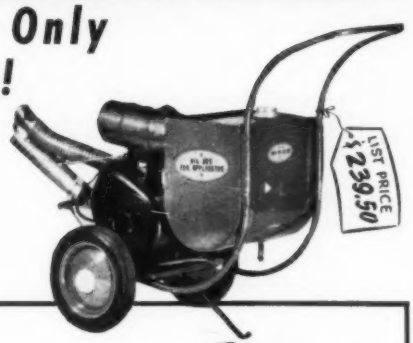
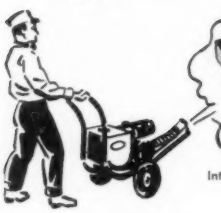




KIL-JET FOG GENERATOR

KIL-JET DISTRIBUTING CO.

4811 Carnegie Avenue • Cleveland, Ohio

International Distributors for the Kileze Company, Inc., York, South Carolina

Features

★ **PORTABLE . . .** weighs only 65 pounds . . . Can be carried in the deck of a car.

★ **POWERED . . .** 1½ HP Continental gasoline engine.

★ **ECONOMICAL . . .** spreads a volume of insecticide evenly over a large area at an operating cost of about 10c an hour.

★ **VERSATILE . . .** Equally effective indoors and out . . . is ideal for homes and gardens, factories, warehouses, camps, farms, motels, roadside eating places, dairies, estates, country clubs, mills, etc.

★ **ADAPTABLE . . .** The Kil-Jet Fog Generator effectively uses DDT, Chlordane, Pyrethrum, Lindane, or any type of oil-base insecticide. When you sell Kil-Jet Fog Generator, you make continuous profits on fog oil sales, year in, year out.

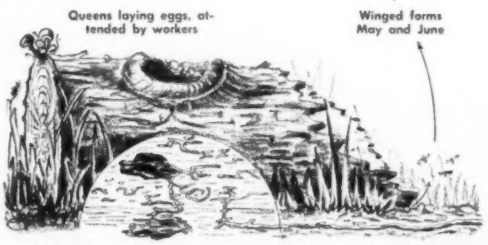
★ **ADJUSTABLE . . .** There is a valve for adjusting the fog for wet, dry, or medium.

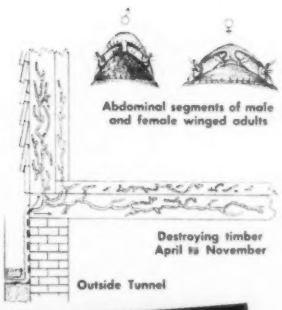
Made in U.S.A.

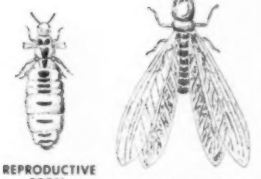
THE SUBTERRANEAN TERMITE

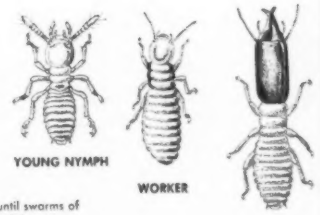
Your Company Name and Address

Male and female with wings building new colony

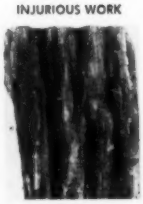








INJURIOUS WORK



Frequently called "whi... and may be told from a... abdomen (the segmented... that does not bear any le... the two parts of the body... called "the petiole."

The chief resemblance... since termites always occu... A few individuals in such... production and are terme... function is to produce ferti... oped: first, a worker caste... the reproductives, digs the... the colony; second, soldier... with fierce looking mandi... from the depredations of... ductive individuals that hav...

...nnoticed until swarms of... the spring of the year on... ermites tunnel in wood,... of the United States, they... ilding a building of ter-... main nest in the ground,... from the building. The... d with kerosene, the in-... treated with creosote... that contact the ground... e.

...e on cellulose, the prin-... h they cannot digest it.... tes provide homes for... rt the cellulose swal-... hich can be digested

Drawings by Charles S. Papp, Ward's Dept. of Entomology

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Ward's Natural Science Establishment
Box 24, Beechwood Station, Rochester, N. Y.

HOW DOES WOOD DECAY?

By HOWARD OLSON
Chapman Chemical Co.

▼

Part Three

Note: Part 1 of Mr. Olson's three part article on wood decay appeared on page 40 of Pest Control's October, 1951 issue. Part 2 appeared on page 24 of the December, 1951 issue. This is the concluding section.

Prevention Of Decay

Since some species of wood are very undurable it became the job of the wood-preserving chemist to make heretofore undurable and unusable woods durable. Through intelligent research and development during the past 40 years noteworthy contributions have been made. Work on the effective use of wood preservative chemicals has led to the widespread usage of wood in nearly every type of construction. Durable woods are becoming more scarce and higher priced. Structures formerly uneconomical when constructed of other materials can now be built of treated wood.

First consideration in the preservation of wood is to select the proper wood preservative to be used. A wood preservative, to be suitable for clean home and building construction, must be highly toxic to wood destroying fungi, readily penetrative at normal temperature ranges, permanent, economical, safe and easy to handle, and nonpoisonous. The inability of a large number of preservatives to meet these conditions has rendered them unsuitable.

Effectiveness of the preservative depends upon its ability (toxicity) to make the wood poisonous to fungi. The advantage of permanence, or lack of leaching over a long period of time, is very important when we hope to extend the life of wood for many years.

Solutions of 5% pentachlorophenol in oil have emerged as one of the best preservatives having the characteristics necessary for clean treatments to be used in homes. The other type of clean preservatives are dissolved in water. Tanalith (Wolman salt), Erdalith, chromated zinc chloride, and a number of others are of the water-borne type. It is not entirely necessary but generally these are applied by pressure methods.

Treatments

Pressure Treating

Commercially pressure - treated lumber has been subjected to the best treatment available. Pressure treatments with clean preservatives are available from most large treating plants. Treatment by pressure is generally used in large scale operations. It assures the best penetration and distribution of the preservative into the wood.

Pressure treating is accomplished by placing the wood on steel cars and running them on tracks into cylinders of six to eight feet in diameter. Once in the cylinder the door is sealed shut and the preservative is pumped in. Pressure is then applied and held, until the required amount of preservative has been absorbed by the wood. The various pressure processes differ in detail, but the principle is quite the same in all.

Hot-Cold Bath

Beside the pressure process, wood preservatives are applied to wood by several different non-pressure methods. The most effective of these is known as the hot-cold immersion. Here the wood is heated in a hot oil preservative bath for several hours and then subjected to a cold immersion of the same preservative for a shorter period. A partial vacuum is thereby created and most of the absorption takes place during the cold immersion.

On the Job Treatments

Aside from buying commercially-treated, decay-resistant lumber, pest control operators will be interested in treating wood in place on the job. This is best done by brush or spray application. Brushing or spraying though not as effective as other treatments is widely used to arrest and prevent decay in the many vulnerable places in every building. For best results with these methods, two or three applications are recommended.

It is common practice now to give many items of wood a three minute dip immersion treatment at the time of manufacture. Most windows and doors now receive this treatment as specified by the National Woodwork Manufacturers Association. This treatment gives adequate protection against decay where the wood is not going to be in contact with the ground.

Since decay in wood can be prevented either by eliminating one or more of the causes; or by using treated wood or other preservative treatments, every operator can render a greater service to his clients by being on the alert for signs of decay in structures. Frequently taking proper steps in time will save much costly repair at a later date.

Remember that sound untreated wood subjected to constant ideal decay conditions will not last long. Sound wood in contact with the soil or decaying wood will likewise decay rapidly. Do not hesitate to recommend the use of only dry lumber, moistureproofing of masonry contacts, ventilation of crawl spaces, and designs that will allow the least possible moisture to enter and be retained.

Develops Sulfoxide-Pyrexcel

S. B. Penick & Co., New York, is now offering Sulfoxide-Pyrexcel, a new synergized pyrethrum extract which may help to alleviate problems brought about by shortages of natural pyrethrum.

Developed in Penick laboratories, the compound is a pyrethrum extract synergized with n-octyl sulfoxide of isosafrole. This compound, it is said, has distinct advantages over natural pyrethrum extract in greater knockdown and kill, milder odor, light color and lower cost. Toxicity is claimed to be of the same low order as natural pyrethrum, and the product is stated to be highly effective in sprays against flies, roaches, Mediterranean flour moths, Indian meal moths, and confused flour beetles.

Penick has published a technical bulletin on the new compound. It can be obtained by writing the firm at 50 Church Street, New York, N. Y.

Solvay Plans Va. Chlorine Plant

Moundsville, Va. will be the site of a new chlorine plant to be erected by the Solvay Process Division, Allied Chemical & Dye Corporation, New York.

PCE LUCIDE S-60

One TRIAL is worth a thousand words

A trial proves more than many words. Give **LUCIDE S-60** a test in your own operation . . . and you'll quickly know why there's a swing to this new money-saving formulation. **LUCIDE S-60** is a water miscible oil containing 60.3% refined grade Chlordane. 1 part **LUCIDE S-60** plus 39 parts of water equals 40 parts of 2% Chlordane Emulsion. Lower concentrates, as well as ready-to-use insecticides, all of permanent stability, may be made from this formulation by simply adding water. Ideal for re-packaging for over-the-counter sales.

LUCIDE S-60 is **STABLE IN HARD WATER** and has a longer lasting residual effect in areas subjected to wetting. Ready-to-use products made from it do not require agitation. You get the same formulation from top to bottom. Completely fire-proof. Will not clog nor harm brass or stainless steel spraying equipment.

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55 GAL. LINED DRUMS	5 GAL. LINED DRUMS	1 GAL. GLASS BOTTLES
$10.85 per gal.	$11.35 per gal.	$12.35 per gal.

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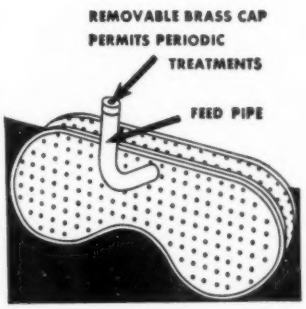
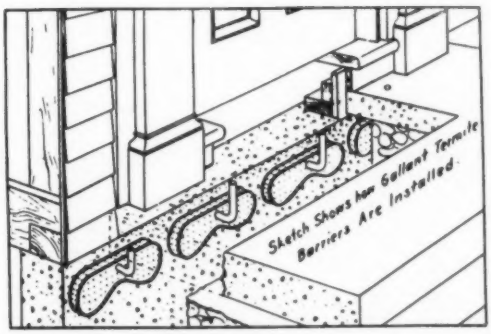


THE GALLANT SYSTEM for PERMANENT TERMITE CONTROL



The new management of **GALLANT TERMITE BARRIER, INC.** cordially invites your inquiries. We assure you of prompt replies with full information. You saw our exhibit at the **NATIONAL PEST CONTROL CONVENTION** in October 1951. Write now for our proposition.

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Eliminate

Fire Hazard

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NOPCO* 1219-A

SOLUBILIZER

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FOR CHLORDANE

* Nopco 1219-A assures effective, safe, low cost pest control.

* Brilliantly clear solutions of Chlordane can be prepared on the job without use of Kerosene.

* No fire hazard—no corrosion hazard—no staining.

Write for complete data and trial sample

NOPCO CHEMICAL CO.

Harrison, New Jersey

*Reg. U. S. Pat. Off.

NOPCO CHEMICAL CO.
Harrison, New Jersey

Gentlemen: Please send me details about NOPCO 1219-A.

Name .....

Address .....

City ..... Zone .... State .....

Notes From Washington . . .

Continue Tin Can Self-Regulation

Continuance of standard procedure whereby users of tin cans for packaging purposes may adjust their tin can bases for the first three quarters of 1952 without governmental determination, has been authorized by the National Production Authority.

Authorized under Direction 3 to Order M-25 (metal can order) this order supersedes Direction 1, which established a method of averaging quarterly tin can bases.

Direction 3 is applicable to any packer who was using tin cans to pack less than the customary volume of any particular product during any of the first three quarters of his selected base calendar year, NPA said. Under M-25, packers may use either 1949 or 1950 as a base year.

It was emphasized that the new direction in no way increases the total amount of cans which a packer may use, but simply gives him an opportunity to spread production equally over all quarters of 1952.

Glass Containers Order Revoked

NPA Order M-51, basic order controlling use and manufacture of glass containers, has been revoked. Originally issued because of the heavy demand for glass containers to replace defense-scarce tin, the revocation conforms to NPA's policy of removing controls whenever possible.

Glass containers, however, along with all types of containers, are still subject to inventory restrictions of NPA Regulation 1.

NPA Permits Self-Certification To Small Users

Approximately 15,000 additional small users of controlled materials will be relieved by National Production Authority of the necessity of filing CMP-4B applications for allotments of three metals. The change will be effective with the second quarter of 1952.

Manufacturers of class "B" products will not be required to apply to NPA if their total requirements during the quarter for each of the controlled materials shown below will not exceed the following amounts:

Carbon Steel	30 tons
Alloy Steel	8 tons
Stainless Steel	1,500 lbs.
Copper and copper-base alloy	3,000 lbs.
Aluminum	2,000 lbs.

Controlled Materials Plan Regulation 1 is being amended to permit this self-certification.

Lack of Scrap May Force Shutdown, Wilson Says

Charles E. Wilson, director of defense mobilization, warns that serious setbacks in our defense production will occur if urgently needed iron and steel scrap is not found soon.

Backing Wilson in a plea for all industrial and trade associations to form collection units is Manly Fleischman, defense production administrator, who says that any shutdown for lack of scrap would be "a national catastrophe and a tremendous road-block in the way of the entire mobilization effort."

Trade associations are urged to form collection committees to recover all unused iron and steel materials and turn them in at once. "Where there is business, there is scrap."

Four Chemicals In Short Supply

Four chemicals commonly used in the preparation of insecticides are listed as being in "short supply" on Basic Materials List No. 4, issued on December 28, 1951. The four include benzene, chlorine, pyrethrum and sulfur.

Supplies of other chemicals used in insecticide manufacture are apparently adequate for 1952.

Hebbard Named In Realignment

In a general realignment and addition of personnel, National Production Authority's chemical division has appointed George Hebbard of Bay Ridge, Maryland as chief of the inorganic and agricultural chemicals branch.

West Gains Cyanamid Post

New technical director of American Cyanamid Co.'s plant in Bridgeville, Pa., is H. J. West. He directs development, pilot plant operations, raw material and finished product specifications and the control laboratory.

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the actual Cost and you'll choose . . . TIFA

BEFORE YOU BUY a fog applicator, be sure to find out how much it will cost you to operate . . . how many bugs it will kill per dollar. No question, you'll settle on TIFA!

TIFA WILL SAVE YOU MONEY in overall operation . . . meet your most rigid specifications. For this amazingly effective unit is backed by 10 years' experience in manufacturing fog-machines. It carries the Underwriters' Listing Seal.

EACH TIFA UNIT is compact, portable, one-man-operated. It handles solutions, emulsions, suspensions with a range of droplet control from ½ to 200 microns. It discharges insecticides in a clean DRY fog which spreads quickly . . . permeates tiniest crevices . . . is SURE DEATH to mosquitoes, flies and other insects.

TODD INSECTICIDAL FOG APPLICATOR

Carrying Underwriters' Listing Seal

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31 NASSAU PL., EAST ORANGE, N. J.

Here's One Answer To Perplexing Slab Problem

Controlling termites that enter from beneath the concrete slab flooring of radiant-heated homes is probably more of a problem in California than in other parts of the country since there is a predominance of one-story homes there.

In a recent trip to the west coast, your editor asked leading termite men what methods they used to combat such infestations. Here is the solution used by Ken Scott of Termite and Pest Control Co., Glendale, California.

Termite and Pest Control's crews carry a formulation which they mix themselves. It serves not only as a termite-killer, but similarly is effective against fungus growth, also a problem in warm, damp climates.

The mixture consists of:

1 gallon 20% Pentachlorophenol
5 gallons 5% Copper Naphthanate
5 gallons Carbon Tetrachloride
10 gallons STD (a formulation consisting of 15% ethylene dibromide, 1-2% chlordane, and the balance of 350° flash point kerosene)

21 gallons total

In order to avoid escaping of the chemicals through gopher holes and other similar passages often prevalent beneath slab-constructed homes, holes are drilled at 5 ft. intervals, using a 1" hollow core, rotary concrete drill. One quart of formulation is forced into each such hole under 150 to 200 lb. pressure.

Wherever there is a danger of discoloration, the pentachlorophenol and copper napthanate are omitted from the mixture.

We asked Mr. Scott how his men overcame the troubles that result when the moisture-protecting asphalt coating commonly found beneath concrete slabs is pierced in the drilling process. He said this was no problem at all. The answer is a simple one. Just pour sufficient pitch into the bottom of each hole before filling it with cement. One of his crewmen told us many builders set the slabs on top of coarse slag, the stones of which often pierce the asphaltum membrane anyway and make it ineffective.

What About The Pipes?

There still doesn't seem to be a satisfactory answer to locating copper heating pipes imbedded in the slabs of radiant-heated homes. Some have proposed using metal-detectors such as used by telephone linemen, plumbers, etc. A quick check of a few manufacturers of such devices reveals that such instruments of the size and accuracy needed by termite men don't seem to be available. One manufacturer said a detector, which they now use for demonstration purposes only, might be built in lots of 500 for approximately $90.00, but even then the instrument would be ineffective where honeycombed wire mesh had been used to reinforce the concrete. The detector could not single out the pipe from the mesh.

A TO in St. Louis told us recently that he had enlisted the aid of the builder in pinpointing the location of heating pipes in the slab of a home the contractor had built. Even with this expert counsel, the TO's crew struck a pipe and it cost $450 to repair the damage.

If you know of a firm that manufactures a portable, accurate pipe-locating instrument, or if you've discovered another way to finding out where to sink your drills in concrete slabs without damaging heating pipes, send in your answer to Pest Control magazine. Your solution will be printed in the "Termites" section and full credit will be given to you.

A new field of opportunity is open to TOs in the increasing popularity of slab-constructed homes. But there is also a need for sharing of knowledge with operators the country over so that the industry can effectively control such termite infestations without becoming involved in unnecessary repair expense.

National Research Council Backs Chemical Use In Foods

After a year's study of claims that chemical additives used in food processing and production were dangerous to the public health, the National Research Council's food protection committee has branded these "exaggerated viewpoints" as having "no justification".

The committee stated that "it is to the credit of industrial concerns and law enforcement agencies that they have been able to make so much progress without jeopardizing the health of the public."

Continuing its report, the committee noted that "a clear distinction should be made between hazards which may exist, or result from accident, during manufacture or during the use or application of large quantities of pesticides to protect crops or animals from the ravages of pests, and the hazards resulting if more than minimal quantities of these chemicals remain in foods. Food hazards should not be confused with hazards due to accident during manufacture, use or application.

Distinction Between Hazard And Toxicity

"Careful distinction must be made," the committee pointed out, "between hazard and toxicity. Toxicity is the capacity of a substance to produce injury; hazard is the probability that injury will result from the use of the substance in the quantity and manner proposed. An estimate of hazard . . . must be based upon knowledge of the substance's toxicity and the details of its use.

"There need be no hazards involved in the use of chemical additives in foods provided adequate scientific research programs are carried out prior to the use of an additive. The fact that a chemical is toxic does not mean per se that its proper use as an additive will entail a hazard to man."

Stressing that practical and effective means of determining chemical toxicity have been worked out in laboratories, the committee stated its belief "that no reputable manufacturer would add any chemical to food when a hazard to the public is involved."

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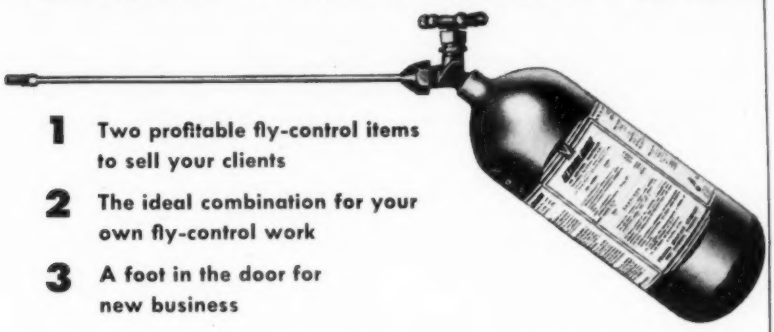
THE ANSWER TO THE FLY CONTROL PROBLEM



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FORMULATIONS RECOMMENDED

LETHALAIRE V-21 is a superpowered aerosol containing an extra quantity of Pyrenone,* the revolutionary new pyrethrins-piperonyl-butoxide concentrate. It outperforms ordinary aerosols in economy, speed of knock-down, mortality.

V-21 is safe to use in the presence of food and food products, when used as directed. It leaves no tastes, odors or messy residues. It is unsurpassed for control of flies. This formulation is especially recommended for use in grocery stores, restaurants, hotels, hospitals, canneries, bakeries, bottling and dry cleaning plants, laundries, and for the clothing, rug and fur trades.

LETHALAIRE S-200 is a self-propelled residual spray containing a potent new insecticide, Lindane. The spray deposits an insecticidal film which retains its killing properties for many days. It is an excellent protection against flies (including DDT-resistant strains), fleas, ants, flying moths, and carpet beetles.

S-200 is ideal for treating outbuildings and exterior areas where flies gather—garbage disposals, dairies, kennels, around hotels and institutions. It is a valuable aid in the clothing, rug and fur trades.

LETHALAIRE was one of the first aerosols created expressly for industrial use. Lethalaire formulations are backed by a brilliant five-year performance record and are produced in one of the best-equipped plants in the nation. You can depend on any formulation that bears the name LETHALAIRE.

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Model 52 **INSECTRON**

Controls **FLIES, GNATS AND MOSQUITOES**

15,000 cu. ft. air space coverage.

A NEW THEORY OF OPERATION FOR LINDANE VAPORIZATION GIVES GREATER ACCURACY OF DIFFUSION.

★ The chemical unit and operating components are enclosed and insulated. Vents allow proper vaporization.

★ The INSECTRON operates at a low temperature-26° C below the melting point-preventing chemical breakdown or catalytic action.

★ A factory-set thermostat regulates and maintains temperature. It contains a thermal fuse to prevent overheating and also a pilot light.

★ The INSECTRON is conveniently serviced from the bottom of the unit.

Simplicity of theory and design allows a moderate price for volume sales.

Especially suitable for contract operators.

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SENCO PHOSPHORUS PASTE
Commonly called rat and roach paste. A specific application for the larger species of roaches. Also an attractive and effective rat poison.

10 lbs.	$ 6.00	50 lbs.	$19.00
25 lbs.	11.00	100 lbs.	35.00

SENCO ARSENIC SOLUTION
A 9 to 1 Concentrate. One gallon plus nine gallons of water, makes TEN GALLONS of a toxic drink for the rats and mice.

One gallon $6.50 Five gallons $25.00

SENCO MICROFINE ARSENIC
Kills rats and mice. Three times more toxic than ordinary powdered arsenic.

10 lbs.	$6.00	50 lbs	$13.00
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POISON GRAINS FOR MICE.
Strychnine or Thallium treated Canary Seed, Whole Oat Kernels, and other grains.

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PEST CONTROL

primer

by A. Pescop

Identification Of Orders; No. 7, Siphonaptera

SIPHONAPTERA

Siphon (a tube) apteros (without wings)

Fleas

Characteristics:

1. Small, wingless body, laterally compressed (flattened at sides)
2. Hind legs long, stout, fitted for jumping
3. Mouth parts piercing and sucking
4. Complete metamorphosis

Of Importance To PCOs

Fleas are ecto-parasites which attack practically all warm-blooded animals, inflicting painful, irritating bites. Promiscuous feeders, shifting from host to host, these insects are the principal spreaders of bubonic plague from man to man. They are particularly dangerous following natural disasters or military devastation affecting urban areas.

Common fleas (family Pulicidae): This group includes a large number of species, which attack man, hogs, dogs, cats, all types of rodents and many other fur-bearing animals. Individual species are commonly named after the host animal they favor, but most fleas will attack any hair or fur-bearing mammal.

FLEA

Adults are minute, being 0.8mm. to 5.0mm. long. Their bodies are extremely thin from side to side, hard-shelled and spiny. It is almost impossible to crush them by hand pressure alone. Color is generally black or dark brown. Mouth parts are piercing-sucking. No wings are present, but there are powerful legs for jumping. Their only food is blood. Once they have eaten as adults, they can live for long periods without an additional blood meal.

Egg stage usually lasts 2 to 14 days. Eggs are white, relatively large with only a few being laid at one time. They are laid loose in dust, dirt or bedding of the host mammal. Larval forms have chewing mouthparts, feed on organic materials and are non-parasitic. Larvae are fully segmented with white bodies and pale brown heads. Climatic variations and differences in specie vary time of maturation from 2 to 3 weeks to as much as 2 years.

Eleven different species are capable of carrying bubonic plague, and several types can transmit endemic or murine typhus. Certain fleas also act as intermediate hosts for dog and rodent tapeworms, which sometimes affect man.

Control: Eliminating rodents is an excellent method of control, since some of the most dangerous fleas are naturally parasitic to rats and mice. When infestations occur on domestic animals, derris soaps and powders can be used with good results, since derris is toxic to fleas and harmless to animals. Dusting animals with 5 to 10% DDT dust, or 1 to 2% chlordane or lindane kills the fleas, but may pose a toxicity problem to the animals themselves. Cats, in particular, should never be treated with DDT dust. Use pyrethrum instead. Residual spraying with 5% DDT or 1 to 2% lindane around floor areas and lower walls will kill off fleas. Clean up of all refuse and debris will make chemical control more effective. Larvae feed on all types of organic refuse, and will mature unless thorough clean-up is made. Eggs can be killed by scrubbing floors with hot soapy water, or by wiping with a kerosene-soaked mop. If a house becomes heavily infested with fleas, fumigation with HCN is an excellent means of eliminating them.

Chigoe flea (Tunga penetrans): Sometimes known as the burrowing flea this tiny insect measures about 1/25 inch in adult form, and is reddish-brown in color. It breeds in the southern U. S., Mexico and other sub-tropical and tropical regions. After mating occurs, the female attaches herself to the skin of a man or domestic animal, especially between the toes and under toenails, and sucks blood. Gradually the female works her way into the flesh. As the eggs within the female enlarge, she swells up and a pus-filled ulcer is formed on the attacked foot. Since eggs are eventually dropped from entrance hole into dirt, control is the same as for more common species. However treatment of chigoe flea wounds should be turned over to a physician. In heavily infested areas, all domestic animals should be kept away from houses.

murder, inc!

RO-DETH

(containing Warfarin)

is sure-death!

RO-DETH, a ready mixed, ready to use rodenticide containing new, wonder chemical, Warfarin, is acclaimed by PCOs as "the best thing for rats and mice we have ever used".

- **New 100% long-range effectiveness**
- **Safe — only excessive repeated doses can harm pets or humans**
- **More economical because it's ready mixed — no waste of time or materials**
- **Tested in the field**
- **No bait shyness**

Case of 12 1 lb. Cartons for Over-The-Counter Sale $7.00 per case

12 or more Cases (144 or more Cartons) $6.00 per case

10 lb. Carton . . . $ 4.00 30 lb. Carton . . . 9.60

100 lb. Carton . . . 28.00

all prices FOB Philadelphia

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"Serving the Pest Control Industry"

Manufacturers and Distributors of Pest Control Products

This is the **SPRAYER YOU BUILT!**

STAINLESS STEEL TANK TYPE SPRAYER

• A truly professional unit, designed to provide the advantages which you need for the larger jobs where more insecticide must be used than can be handled by smaller units.

Check these features: All mechanical seals — no soldered inlets — leak-proof valve gives clean shut-off — has Koroseal washer — accurate pressure gauge with unbreakable crystal — stainless steel 2¾ gal. tank and pump — renewable hose end adapters — 5 ft. ¼" I.D. PCE oil-resistant hose — 18" PCE aluminum extension — Fan pattern spray nozzle — Knapsack type web strap.

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Send for our Catalog of equipment and supplies for the PCO

Get our price on Hose, Valves, Extensions, Service Cases, Nozzles, Plastic Bottles, Stainless Steel Wool, and LUCIDE FORMULATIONS.

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LABORATORY SERVICES

• Peet-Grady tests • C.S.M.A. aerosol tests • Biological evaluation of agricultural insecticides • Phenol coefficient determinations • Chemical determination of insecticides • Warm-blooded toxicity studies • Warfarin assays by chemical and biological means.

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WISCONSIN ALUMNI RESEARCH FOUNDATION

P. O. Box 2059 **Madison 1, Wisconsin**

PEST CONTROL

news

Promoted is entomologist **Neely Turner**

Turner Gets Ass't Directorship

Neely Turner, entomologist at the Connecticut Agricultural Experiment Station, has been named assistant director, effective January 1.

Turner, veteran of 24 years service with the station, is well known for his laboratory researches on the toxicity of insecticides, and for his constant and untiring cooperation with PCOs in furthering their educational programs.

During the past year he was chosen as an exchange scientist to spend six months at the Rothamsted Experimental Station in England, where he devoted his time to a study of insecticides.

PHS Officials Gain New Posts

Two Atlanta officials of the Public Health Service, Federal Security Agency, have been transfered to higher posts, following retirement of Dr. F. V. Meriwether, medical director of PHS' Region VI, comprised of six southeastern states.

PHS Surgeon General Leonard A. Scheele has moved up Dr. R. A. Vonderlehr, medical director of the Communicable Disease Center in Atlanta, to fill Dr. Meriwether's old post.

Dr. Justin M. Andrews, for six years deputy officer in charge of CDC, takes over as officer in charge of the Center. A nationally known authority on malaria and other insect-borne diseases, Dr. Andrews has been, successively, a faculty member of Johns Hopkins School of Hygiene and Public Health, 1926-30; a special member of the Rockefeller Foundation, 1929; visiting professor parasitology, University of the Philippines, 1930-31; and associate professor of protozoology, Johns Hopkins, 1931-38.

Buettner Returns From Hospital

Well on the road to recovery, William O. Buettner, National Pest Control Association executive secretary, has returned to his duties at the association headquarters in New York City.

Suffering a heart attack following the association's convention in Boston last October, Buettner was confined to a hospital bed until shortly before the first of this year.

Although recovery has been rapid, it is expected that Buettner will not as yet be able to pursue the strenuous schedule of activity he followed prior to his illness.

Shaw Becomes New ARA Head

Appointment of Dr. Byron T. Shaw as administrator of U. S. Department of Agriculture's Agricultural Research Administration is disclosed by Secretary of Agriculture Charles F. Brannan.

Dr. Shaw succeeds Dr. P. V. Cardon, who, on December 31, the effective date of his resignation, culminated a career of 42 years as researcher, teacher and administrator. Deputy administrator since 1948, Dr. Shaw first joined ARA in 1947.

Pennsalt of Wash. Names Two

Richard A. Snyder and Kenneth W. Montfort have been named as district sales managers for Pennsylvania Salt Manufacturing Company of Washington.

Revealing the new appointments, Pennsalt special chemicals sales manager William J. F. Francis said that Snyder will head up the company's Los Angeles sales office, while Montfort directs the Portland, Oregon headquarters.

Weiss Fights Korean Pests

Lt. Clifford M. Weiss, a January, 1951 graduate of Purdue University's pest control course,

Purdue PCO Grad **Clifford M. Weiss** in Korea

is now serving as an entomologist with the U. S. Army in Korea.

Taking his college work under the guidance of Professor J. J. Davis of Purdue, Weiss was commissioned a second lieutenant shortly after graduation, and assigned to the 37th Preventive Medicine Company in the far eastern theater. In civilian life Weiss is vice-president of the All Westchester Exterminating Corp., Mount Vernon, N. Y.

Orkin Managers Meet

Preparatory to launching a greatly increased advertising campaign, Orkin Exterminating Co. summoned more than 200 of its managers and supervisory personnel to a three-day sales meeting in Atlanta last month.

Highlighting the meet, attended by representatives from all of Orkin's 186 branch offices in 21 states, were talks by Jake Maxwell, Curtis Publishing Co., Dr. William D. Jones, professor of chemistry at Emory University and Jack Tarver, Atlanta Newspapers, Inc.

Sounding keynotes for this year's extensive sales and advertising campaigns were Orkin's executive vice-president Petty Bregman, vice president Theodore Oser, and technical director Herman L. Fellton.

ACME . . . the Only Gas Mask with the "Picture Windows"

You never have that "jammed-in" feeling, wearing the ACME Full - Vision Gas Mask. Its patented, larger lenses are like picture windows, giving you full natural vision for that safe, unconfined feeling. When you walk, you can actually see your toes without bobbing your head. This factor alone makes Acme outstanding among gas masks . . . well worth looking into.

Write for the complete story on Acme Gas Masks for the pest control industry.

ACME PROTECTION EQUIPMENT CO.
3037 West Lake Street, Chicago 12, Illinois

GET ON THE BAND WAGON

Follow the Crowd With PER-MO Profits

- ★ **NOW Per-Mo Warfarin for Rats & Mice**
  Packed in 1 lb., 4 lb. tin containers
- ★ **Per-Mo 5 Year Guarantee Moth Proof Liquid**
  Packed in Pints, Quarts, ½ gals., gals., and 5 gal. containers
- ★ **Per-Mo Flameproof Liquid**
  Packed in Gallon containers or in Drums
- ★ **Per-Mo Rat & Mice Liquid**
  Packed in 8 oz. bottles or in gallon containers
- ★ **Per-Mo Rat Bits Made With Red Squill (Fortified)**
  Packed in 4 and 16 oz. containers or in Bulk
- ★ **Per-Mo Rat Paste, Made With Red Squill (Fortified)**
  Packed in 4-8-16 oz. jars, and in Bulk
- ★ **Per-Mo Rat Paste, Made With Antu**
  Packed is 4-8-16 oz. jars, and in Bulk
- ★ **Per-Mo "Chek" Deodorant**
  Packed in Quarts or in Gallons

WE WILL SHIP YOU A GENEROUS SAMPLE OF ALL THE ABOVE PRODUCTS FOR $5.00 EXPRESS PREPAID.

Send Check or Money Order

PER-MO
STANDS THE TEST
IT'S BY FAR THE BEST

• All Per-Mo Products Packed Under Your Private Label If Desired. Write Today . . . Full Particulars First Letter

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LOUISIANA P. C. O.

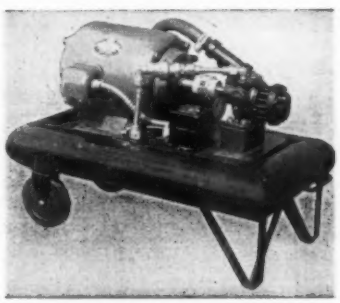
Says PRESHUR-MITE Portable Sprayer Tops in Performance

L. S. "Bugs" Bridges, popular and well-known PCO from Baton Rouge, La., says:

"I have been using my Preshur-Mite Sprayer for the past three years, and I would not exchange it for any I have ever seen before. The service Mr. Ewing renders a customer who owns one of his machines is most valuable, too. I personally feel that Mr. Ewing should be complimented on providing the industry with one of the best and most economical machines on the American market."

Mr. Bridges is one of many valued customers who know by years of experience that the Preshur-Mite line is outstanding for both quality and economy. Take a tip from these satisfied PCO's and give Presur-Mite a try.

The Automatic PRESHUR-MITE



Heavy duty unit designed for termite control work. Pressures up to 225 lbs. PSI and up to 5 gals. liquid per minute. Features automatic pressure switch. Works direct from drum. Weighs only 127 lbs.

The Junior PRESHUR-MITE

Ideal for all types residual spraying, moth proofing, roach and termite control work, etc. Compactly designed for easy handling. Will stand up under rugged treatment. Pressures up to 125 lbs. PSI and up to 2½ gals. liquid per minute. Weighs only 44 lbs.

Complete line of 5 Preshur-Mite models to select from. Electric or Gasoline powered. Priced from $145.75 to $361.86 f.o.b. Jackson, Miss.

Write for New Catalog and Price List

Ewing Manufacturing Co.

P. O. Box 1986 Phone 3-0343
Jackson, Mississippi

After Fiberglas blankets are installed in end of railway car, wood liner is placed over the matting, compressing it into space where insects otherwise would be harbored.

Mich. PCO 2-Day Conference To Feature Practical Approach To Control Problems

Three very practical laboratory sessions on pest control will highlight the two-day Michigan Pest Control Operators Conference to be held at Michigan State College, Lansing, March 11 and 12.

One lab meeting will feature termites and other wood destroyers. Another is to cover fleas and ticks, and the third will investigate moth and carpet beetle problems. There will be demonstrations on control procedures as well as roundtable discussions to answer delegates' questions.

Another outstanding part of the program includes a presentation of "What the PCO Should Know About the Needs of a Restaurant", with on-the-spot demonstrations of the proper application methods that should be used. Both the cafeteria-type restaurant as well as those with table service will be studied.

Adequate housing for delegates is assured in the new Kellog Center for Continuing Education on the university campus. The Center will serve as headquarters and registration location for the conference. It is being sponsored by the university's Department of Entomology through Dr. Ray Hudson, its head.

For advance registration and further details write Dr. Hudson, University of Michigan, Department of Entomology, Lansing.

Pennsalt Merges with Sharples

Through an exchange of common stock, Pennsylvania Salt Manufacturing Company of Philadelphia has combined with Sharples Chemical, Inc., of Wyandotte, Pa.

Pennsalt president, George B. Beitzel, says Sharples, Inc. will continue to operate as a separate unit of Pennsalt, but that there will be an exchange of technical information and coordination of some company policies. Beitzel states further that this merger "opens new horizons of research and product development for both companies". He points out that Sharples, Inc. will now be assured a supply of some of its basic raw materials, such as chlorine, caustic soda and ammonia, which are produced at the adjacent Pennsalt plant at Wyandotte.

Fiberglas Blanket Blocks Freight Car Pests

Owens-Corning Fiberglas Corp. in Toledo, Ohio, reports it has an answer to insect infestations in rail shipments of grains and milled products. The process is simple enough. Fiberglas blankets, developed by Minneapolis engineer Frank J. Bishop, in cooperation with Owens-Corning, are placed behind the wood linings at the ends of box cars in which grains are shipped. A wood liner is then installed over the blankets and nailed in position. The liner compresses the matting and prevents insect infestation.

Studies revealed that insect pests harbor in accumulations of grain and dust in these spaces, then multiply and cause extensive and costly damage to shipments. Employment of Bishop's system in these spaces is said to eliminate such breeding places.

Used By Southern Pacific

Southern Pacific Railroad has begun extensive use of the new material, having installed it in 1,500 of its new box cars built at Bessemer, Alabama. During 1952 the same Fiberglas protection will be placed in an additional 4,100 box cars to be built by Southern Pacific.

According to Owens-Corning officials, some 15 railroads have either begun to use or are exploring the effectiveness of the Bishop system, which has been under laboratory and field tests for five years.

Extension Booklet On Insecticide

"Insecticides For Garden, Home and Field" is the title of a new booklet issued by the University of Minnesota Agricultural Extension Service, USDA.

This slick papered, 24-page booklet contains complete descriptive information on the types of insecticides now being recommended for various uses in both urban and agricultural areas. Tables showing exact concentrations and ingredients to be used are also provided.

Requests for this pamphlet should be sent to the Bulletin Room, University Farm, St. Paul 1, Minn. Ask for Extension Bulletin 263.

FJP Holds Fund Raising Banquet

Concurrent with a 20 million dollar welfare drive, the Pest Control Division of the Federation of Jewish Philanthropies of New York held its annual dinner on January 24 at the Savoy Plaza Hotel in New York City.

Sharing the spotlight as guests of honor were Jerome Trichter, Assistant Commissioner of Environmental Sanitation and PCO Jacques J. Hess, who is retiring after three years' service as divisional chairman. Trichter was honored for his many years of outstanding public service, while Hess was applauded for his pioneer work in founding and leading the philanthropic organization's Pest Control Division.

Instrumental in making this year's banquet a big success were co-chairmen Chester Schwimmer, Fumex Sanitation Co., and H. A. Rosenfeld, World Wide Exterminating Co. Providing able support were committee members Seymour Bayer, Sudex, Inc.; William O. Buettner, Buettner Pest Control Corp.; Alex Feuerstein, Standard Exterminating Co.; Harry Gair, Abalon Exterminating Co.; Edward N. Goldey, Bliss Exterminating Co.; H. J. Jacobson, Chemical & Exterminating Co.; Daniel Kavanagh, Exterminating & Fumigating Union Local No. 155, B.S.E.J.U.; Nathan Kimball, Supreme Exterminating Co.; Daniel Klein, Allied Exterminating Co.; Henry Mahler, Mahler Exterminating Co.; Phillip Mayer, Jr., Evins Exterminating Co.; Fred Oberlander, Bond Exterminating Co.; Col. Leopold Phillip, Disinfectant and Exterminating Corp. of America; Charles Pomerantz, Bell Exterminating Co. Inc.; Stefan Rohdie, Excelsior Exterminators; Nathan Sameth, Sameth Exterminating Co.; Justin Simon, General Exterminating Corp.; Sidney Wimmer, Majestic Exterminating Co.; David A. Weisburger, B. & D. A. Weisburger; and Nathan Fremed, Sameth Exterminating Co.

Lindane Wins Army Approval

Use of lindane for control of various insects infesting military personnel and their quarters has been specified by the research and development division of the army's Quartermaster Corps.

Applying to both American and foreign theaters of operations, the specification states that lindane dusting powder will be used to control body, crab and head lice, fleas, bedbugs and other crawling insects which may attack military personnel or infest their quarters.

Nearly one million pounds of lindane dusting powder, slated for our armed forces in Japan and Korea, were delivered to the army last month by the California Spray Chemical Corp., Richmond, Calif.

PHS Reports On Rats, Warfarin

Observations on rat ectoparasites and the incidence of typhus fever in San Antonio, Texas, form the lead article in the latest issue of Public Health Reports, Vol. 66, No. 52, dated December 28, 1951, official publication of the U. S. Public Health Service.

Results of studies made on warfarin as a plague suppressive in Hawaii are also revealed, plus an account of cage tests made with the same rodenticide on the Hawaiian rat, *Rattus hawaiiensis*.

Copies of the publication can be obtained free by contacting your Congressman.

NOW you can offer both MOTHPROOFING and FLAMEPROOFING

IN ONE SPRAYING APPLICATION!

GUARANTEED IN WRITING
2 Years against FLAME DAMAGE
5 Years against MOTH DAMAGE

Nationally Tested and Approved
THE PRODUCT SENSATION
of The Pest Control Industry

Packed in Pts., Qts., Gallons
Dealer & Jobber Inquiries invited.

WRITE TODAY

U. S. Chemical Products Co.
P. O. Box 212 Columbus 9, Ohio

STOP TERMITE DAMAGE NOW!

CRE-O-TOX Termite Chemicals

20 YEARS effective termite control.
COMBINATION of chlorinated phenols and other toxics proved more effective than any single toxic.
ACTIVE INGREDIENTS almost 100%.
TOX-EOL 12½ CONCENTRATE is diluted with 12½ parts low grade petroleum distillate to make proper strength treating solution.
CRE-O-TOX TERMITE CHEMICALS stand up where others fail.
WRITE TODAY for our 5 year WARRANTY plan, with protected territory, advertising cooperation, etc.

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P. O. Box 5026 Memphis (12) Tenn.

organization news

J. Harrie Burdge is "Dean of Pestology"

Burdge Feted At Mass. Meet

In recognition of his long and fruitful years in the pest control industry, J. Harrie Burdge, Structural Pest Control Service, Raymond, Maine, was honored at ceremonies held during the Eastern PCO Conference at Amherst, Mass., Jan. 31-Feb. 2.

Symbolizing Burdge's achievement over more than 50 years as a PCO was an inscribed shingle investing him with the office of "Dean of Applied Pestology — so decreed by his fellows in grateful affection for a peerless exemplar of his profession—dutiful citizen, soldier, gentleman, teammate, friend."

In proposing Burdge for the honor, George R. Elliot, Ransford Pest Control, Worcester, Mass., cited the Yankee PCO as being a "positive force in elevating the standards of our industry. His counsel has been generous and wise—his full career of service to man would ornament any profession. It is our envy and our prized inspiration."

Presenting the shingle, which was countersigned by the presidents of both the New England and National Pest Control Associations, was University of Massachusetts president, Ralph A. Van Meter.

Texans Elect Regional VPs

Voting returns for Texas Pest Control Association regional vice presidents are now complete, with the following results: Region 1, L. F. Holder, Houston; Region 2, W. C. Boren, Corpus Christi; Region 3, R. L. Perkins, San Antonio; Region 4, Oliver Goldsmith, Waco; Region 5, Clell W. Smith, Dallas; Region 6, Harlan K. Baker, Fort Worth; Region 7, K. C. Bell, Amarillo.

Results of the Texas PCA's 1952 presidential election were carried on page 40 of *Pest Control's* January issue.

Gunn Guides LA PCOs

California "dew" notwithstanding, members of the Los Angeles district, Pest Control Operators of California, have met and named J. Wilfred Gunn, Hollywood Termite Control Co., as their 1952 chairman. Moving into office along with Gunn are W. W. Tully, U. S. Termite Control Co. vice-chairman, and Sidney L. Crocker, Crocker Termite Control, treasurer.

The following were elected to the board of directors: Lyman P. Pinkston, Columbia Pest Control Co.; Walter Gunn, Hollywood Termite Control Co.; George Taubert, Taubert Termite Control; Robert Mesecher, Bob's Termite Control Co.; Harold Bowyer, Bowyer Termite Control Co.; Ray Dewey, Dewey Products & Service; and H. R. Packard, Jr., Packard Termite Control Co.

Fix N. Carolina Requirements

Newly-elected North Carolina Pest Control Association president David L. Goforth has set membership requirements in the recently organized group.

Working in conjunction with 22 other charter members, Goforth explains that membership will be limited to owner-operators of at least two years' experience, or owner-operators of one year's experience holding a college degree in courses allied to pest control work.

Applications for charter membership will remain open for 90 days. Expectations are that the present membership will eventually grow to about 150.

Now holding office along with Goforth are A. T. Best, Best Exterminating Service, Durham, vice president and Walter H. Wilson, Wilson Exterminating Co., Winston-Salem, secretary-treasurer.

Ludington Wash. PCA Prexy

Promising close cooperation with governmental and legal authorities, Mel Ludington, Northwest Pest Control, Everett, took over as 1952 president at a recent meeting of the Washington State Pest Control Association.

George Atchison, The Ardee Maintenance Co., Tacoma, was named vice president, and Paul Sauers, Spokane, becomes secretary-treasurer.

CALENDAR OF MEETINGS

New York PCA "Dutch Treat" Luncheon, New York City, February 19.

Kansas Termite & PCA, Spring Meeting, Pitssburg, Kansas, March 1.

Pennsylvania State College PCO Short Course, State College, Pa., March 4-6, 1952.

Iowa PCA Short Course, Iowa State College, Ames, March 6-7.

Michigan PCO Conference, Michigan State College, Lansing, March 11-12.

National Sanitary Supply Ass'n, 29th Annual Convention and Exhibition, Conrad Hilton Hotel, Chicago, March 23-26.

American Mosquito Control Ass'n Annual Convention, Hotel Utah, Salt Lake City, March 24-27.

North Central States Branch, American Ass'n of Economic Entomologists, Annual Meeting, Minneapolis, Minnesota, March 27-28.

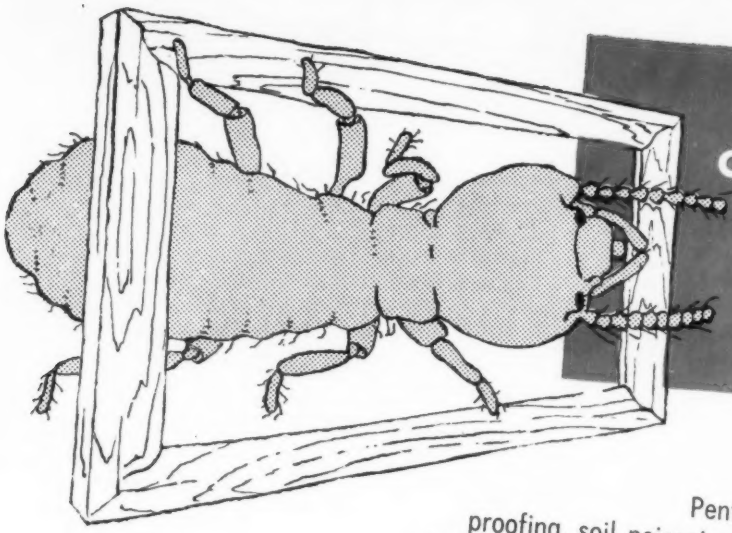
National Agricultural Chemicals Ass'n, Spring Meeting, Fairmont Hotel, San Francisco, April 7-9.

Tenth Annual Canadian PCO Conference, University of Montreal, Montreal, Canada, May 12-14.

Chemical Specialties Manufacturers Ass'n, 38th Mid-Year Meeting, Hotel Copley-Plaza, Boston, June 8-10.

Manufacturing Chemists Ass'n, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., June 23-24.

Forest Products Research Society, Annual Meeting, Milwaukee, June 23-25.



CHEM-TOL
CONTROLS TERMITES

Easy-to-use - Effective - Economical

- Light in odor
- Stabilized Toxicity
- Forms an even crystalline deposit
- Uniform results

PCOs prefer CHEM-TOL, a 40% Pentachlorphenol Solution for termite proofing, soil poisoning and wood preservation. CHEM-TOL, a 1 plus 10 Penta concentrate is easily diluted to a 5% ready-to-use Penta solution which controls termites, powder post beetles and carpenter ants. It also controls wood rot and wood decay. For guaranteed satisfaction specify CHEM-TOL.

CIC

Chemical Insecticide Corporation
57 13th Street Brooklyn 15, N. Y.

WARNING!

Limited Penta stocks point to shortages this spring. Order now and be assured of your supply of CHEM-TOL.

FOR TERMITES

Vaccinol

WOOD PRESERVATIVE

for TERMITES and POWDER POST BEETLES

Backed By 19 Years of Acceptance

Ready-to-use **Effective** **Economical**

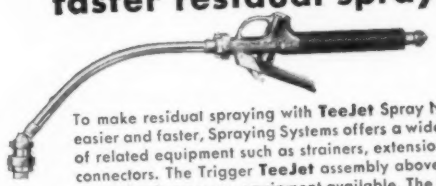
Penetrates wood quickly • Requires no mixing • Does not stain wood or painted surfaces • Remains active for years • Control moisture that causes mold and decay • Safe and easy-to-use • Requires no mask

Exclusive Franchise available to responsible PCOs

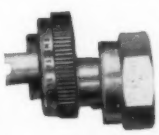
Send Us Your Orders For
PENTAchlorophenol Concentrate 1 to 10

The VACCINOL Products Corporation
P. O. Box 3205 Phone 9-1166 Memphis 9, Tenn.

TeeJet tools for better, faster residual spraying



To make residual spraying with **TeeJet** Spray Nozzles easier and faster, Spraying Systems offers a wide range of related equipment such as strainers, extensions, and connectors. The Trigger **TeeJet** assembly above is one example of accessory equipment available. The Trigger **TeeJet** Valve is quality built, with positive shut-off and lever lock-catch for easy open operation. Extensions are supplied straight or curved in lengths up to 48".



MulTeeJet TIP ASSEMBLY

Here is a handy nozzle assembly that provides four different sprays in one nozzle assembly. The head of the nozzle rotates and indexes to four positions . . . each position giving a different spray. The MulTeeJet Tip Assembly fits the Trigger Valve or will fit any connection used for **TeeJet** Nozzles.

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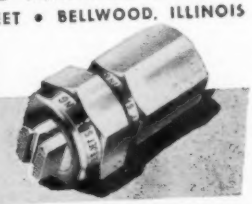
ENGINEERS AND MANUFACTURERS
3221 RANDOLPH STREET • BELLWOOD, ILLINOIS

SPRAYING SYSTEMS
TeeJet
SPRAY NOZZLES



WRITE FOR BULLETIN 58
for complete information on **TeeJet** Spray Nozzles and related equipment for residual spraying.

Hess Gets '52 N.Y. PCA Gavel

Unanimously approving their 1952 nomination slate, members of the New York Pest Control Association voted Jacques J. Hess, Exterminating Services Corp., New York City to serve as their new president.

Presenting Hess with the official president gavel was outgoing prexy Justin Simon, General Exterminating Corp., Brooklyn.

Others named to official posts included M. Blinder, first vice-president, C. Schwimmer, second vice-president, Thomas H. Mahon, staff member of the National Pest Control Association, secretary, and William O. Buettner, NPCA executive secretary, treasurer.

New president Hess immediately launched an open forum discussion for the membership to ascertain just what benefits are received as members of the association. A "Dutch-Treat" luncheon has been planned, to be held the third Tuesday of each month, allowing members to have more frequent get-togethers and a congenial exchange of ideas.

Shape Kansas Meet Plans

Setting their sights on a well-rounded program of public and individual customer relations, officers of the Kansas Termite & Pest Control Association have whipped up an excellent speaking agenda for their March 1 meeting in Pittsburgh, Kansas.

Suggesting rules for ethical business relations and truthful advertising will be Ralph Hinman, manager of Wichita's Better Business Bureau. Summing up the client's point of view, H. L. Wortz, field representative of the Kansas Restaurant Association, will tell conferees "What the client expects from the pest control operator in the way of service, cleanliness and ethical relationship."

Telephone courtesy and the importance of voice contact, will be discussed by a representative of the Southwestern Bell Telephone Company in a talk, "Proper use of the telephone in sales."

Kansas T&PCA vice president Richard Evans promises that additional talks are being planned, and that attending members will hear a first rate program.

Francis Heads Abilene Slate

Electing new officers for 1952, members of the Abilene, Texas Pest Control Association voted O. L. Francis, Francis Termite Control Service, as president.

Vice presidency goes to Bert Freeman, Miracle Laboratories, while S. E. Clayton becomes secretary-treasurer.

Newly-elected Ohio Pest Control Association officers and directors take time out for a convention portrait at their recent meeting in Canton's Hotel Francis. Left to right, top row: **Robert M. Pursell**, Youngstown, director; **Bernard G. Berger**, Springfield, secretary-treasurer; **Jess L. Purdy**, Hamilton, director. Bottom row: **Plummer E. Diehl**, Salem, president; **Bernard Scherzinger**, Cincinnati, vice president; **W. R. Augspurger**, Dayton, board chairman; **H. B. McGahan**, Portsmouth, director. **Worth Breed**, Toledo, director, is not shown.

Retiring New Jersey Pest Control Association President **Harry Stucker** offers warm congratulations to newly-elected prexy **Sol Jordan** at the association's annual officers installation banquet.

Entomologists Dine With NJ PCA

Several entomologists from the staff of Rutgers University were on hand as the New Jersey Pest Control Association recently held its annual officers' installation banquet at the Roger Smith Hotel in New Brunswick.

Warmly praised by toastmaster John K. Medoff for his numerous contributions to pest control advancement was Rutgers entomologist John B. Schmitt. Later on in the program Dr. Schmitt received a mock diploma from Professor Frank G. Helyer, symbolizing the entomologist's achievements in teaching and research in the field of pest control.

From another quarter, too, came congratulations, as Dr. Bailey B. Pepper, head of Rutgers' entomology department expressed great satisfaction with the honest and faithful manner in which PCOs of New Jersey are serving the public. Other distinguished representatives from the university included Dr. Elton J. Hansens and Dr. Ordway Starnes.

Stucker Sets Precedent

Harry Stucker, retiring president, was cited by toastmaster Medoff for his magnificent record while in office. Medoff told banqueteers that it would be difficult to surpass the retiring president's splendid efforts on behalf of the association.

Noteworthy part of the banquet was a presentation by J. Edwin Sameth of a Plaque of Distinguished Merit to Joseph L. Geisman, first president of the New Jersey PCA.

A. F. C. QUALITY PRODUCTS FOR PEST CONTROL

Chlordane, oil concentrate, liquid emulsifiable concentrate, wettable powder concentrate, and ready-to-use liquids and powders.

Super Fluorex V, powerful insecticide powder

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ATLAS "A" Liquid Arsenical

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(for control of Rats and Mice)

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The Acme Station attaches to floor or wall with screws. Special design allows lid to open from top or front. Door is secured with padlock which is furnished. Size: 8" high, 9" wide, opening is 2½" radius.

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Only $2.10

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CLASSIFIED ADVERTISEMENTS

When answering ads where box number only is given, please address as follows: Box number, c/o Pest Control, 1900 Euclid Building, Cleveland 15, Ohio.

Rates: "Position Wanted" 5c per word, minimum, $1.00. All other classifications, 10c per word minimum $2.00. All classified ads must be received by Publisher at least two weeks preceding publication date and be accompanied by cash or money order covering full payment.

MANAGERS WANTED

Several high caliber men for responsible positions with an outstanding pest control firm. Must possess high degree of integrity, initiative, sense of responsibility, good judgment, and ability to work under pressure. Should be commercial (as opposed to research) minded and personally ambitious. Training and practical experience in commercial pest control or as public health engineer, entomologist or sanitarian most desirable. Liberal salary arrangements with excellent opportunity for advancement. Send resume, including photo, to Technical Director, Orkin Exterminating Co., 713 West Peachtree St., N. E., Atlanta, Ga.

HELP WANTED

Termite Foreman. Experienced in all phases of termite control, replacements, chemical applications, etc. Large company, New York metropolitan area. Steady. Good salary. State qualifications and experience. (All replies held in strictest confidence). Write Box 265, Pest Control magazine.

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THALLIUM SULPHATE

For years the first choice of a multitude of PCOs in the control of pests and rodents.

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1-4 lbs.	$13.00/lb.
5-9 lbs.	$11.50/lb.
10 lbs. or more	$10.50/lb.

All prices F.O.B. Denver, Colo., with transportation charges allowed to U.S.A. destination.

Prices subject to change without notice

AMERICAN SMELTING AND REFINING COMPANY

120 Broadway
New York 5, N. Y.

Wis. Poison Law Effective

On February 10, 1952, the Wisconsin State Economic Poisons Law becomes effective. All manufacturers, packers and distributors of economic poison will be required to pay $10 per calendar year per brand, and all brands sold or transported within the state must be registered .

Registration statements should include: (1) Name and address of registrant which will appear on the label as manufacturer, packer or dealer, (2) Name of the economic poison, (3) Complete copy of labeling statement of claims and directions for use, which must also accompany the product. A complete formula together with full description of tests may be required if the agriculture department finds it necessary to have such information.

Registration forms can be obtained, along with a booklet giving details of the new law, from the State Department of Agriculture, Capitol Building, Madison 2, Wisconsin. Request application forms and a copy of Bulletin No. 310.

OK Methyl Bromide Fumigation

Methyl bromide has been added to the list of tested and accepted products screened by the U. S. Department of Agriculture for fumigation of meat packing plants, says J. L. Maxwell of Dow Chemical Company's agricultural chemicals department.

Maxwell pointed out that the acceptance climaxed seven years of laboratory work and field testing in which Dow cooperated with the Meat Inspection Division, Bureau of Animal Industry, USDA.

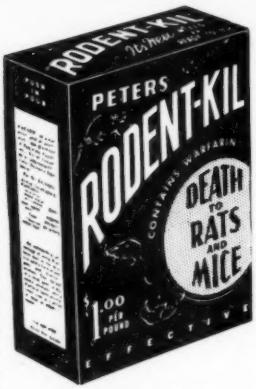
Tests showed that methyl bromide can maintain excellent insect and rodent control in meat packing plants and curing houses without contaminating meat or imparting odor, taste or toxic residue.

Dow Chemical Company, Midland, Mich., is the principal manufacturer of methyl bromide fumigants.

PERSONAL BRIEFS

Glad to hear Bill Buettner is back at 30 Church Street again. Even though reports are that he has made splendid progress, industry members will be doing him a great service if they do not expect all the fire they're used to in Bill for the time being. He'd have been back at the office on Dec. 1st if the doctors had let him. But people don't recover from heart attacks over night . . . The stork visited Mr. and Mrs. Simon E. Hammel of the J. C. Erlich Co., Pottsville, Pa., early in January. He brought a son, Robert Alen. Wish we'd been there to get one of the cigars . . . Herb Packard of Packard Termite & Pest Control, Los Angeles, really has something to be uphappy about. His right hand "man", H. Jule Hicks (of "insects in plastic" fame) has done decided to get married. She's been with Herb a long time and has done a remarkable job as office manager. Condolences to you Mr. Packard, but congratulations to you, Jule! . . . Congratulations are also due Chester Schwimmer and his Fumex Sanitation, Inc., Jamaica, N. Y. for their safety record in 1951. The State Insurance Fund of New York gave the company its 1951 National Security Accident Reduction award for no lost time due to accidents . . . A bouquet to the publicity department of Julius Hyman & Co. A recent issue of the *Denver Post's* magazine section carried a two-page picture story on Hyman's insecticide research, entitled, "The Gobbledygook That Kills Bugs". Gobbledygook refers to the full chemical names of some of its insecticides like aldrin and dieldrin . . . Wilfred Gunn and his Hollywood Termite Control Co. held its annual Christmas open house again this year with plenty of refreshments for the visiting firemen. Nice party, Wilfred . . . This is the first chance we've had to publicly thank all of you for the splendid Holiday greetings you sent us. It's really nice to be remembered in this way. Thanks again, even though a little belatedly. That's all for now. Keep sending us your personals, or I'll lose my job!

Rats, Mice, Moles, LOVE TO DIE this easy, new way!



For the first time, there is a positive, safe, sure way of killing mans worst enemy — the rat. Developed by a famous University of Wisconsin biochemist, wonderful **WARFARIN** mixed with **RODENT-KIL**, does what no other rat poison has ever been able to do. **RODENT-KIL** destroys whole rat colonies — and keeps them under control. Tasteless, odorless, slow-acting **RODENT-KIL** tastes so delicious to rodents, they actually can't resist it . . . keep eating it until they die. Yet so safe not a single serious accident has resulted to a human despite nationwide acceptance and use. Our mixture: meat scraps - cod liver oil - cheese rind steamed bone meal - fish meal - salt - tomato pomace - cheese whey - corn flakes plus **WARFARIN**. This product is dehydrated and will not decompose, mold or turn sour.

Rodent-Kil is packed in the following sizes:

1-lb. cans $7.20 per dozen
2½ lb. cans $18.00 per doz.
25 lb. drums $ 9.25
50 lb. drums 17.00
100 lb. drums 31.00
F.O.B. Stevens Point, Wis.

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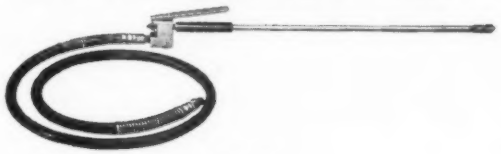

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Protect Buildings from Pigeons - Starlings - Sparrows

New Handy Pack Cartridge and Applicator gun makes it an easy job for P.C.O. to completely rid buildings of roosting birds.

POSITIVE
The Cartridge contains the same material used by our own staff on contractual jobs where a one year guarantee is given to the customer.

HUMANE
The compound does not kill or injure the birds in any way. Birds are instinctively afraid to land on an adhesive surface.

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"Bur-Co" Bird Repellent is absolutely non-poisonous. It also is safe to use on all surfaces, wood, paint, cement, stone, metal or brick.

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The small cost of the repellent and the ease of application will return you dividends.

Write for prices on gun and cartridges. Also about equipment for large commercial program.

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Exceptional Sales Opportunity For Man With Pest Control Experience

Representing the makers of the World Famous, National Advertised, PRESHUR-MITE line of Pest Control Equipment and Supplies. This man will be given protected territory, and most attractive sales commissions. This is an opportunity limited only by the ability and diligence of the man we select. This man will net more than $10,000 per year. After he has proven his abilities he will be offered an opportunity to purchase an interest in the company.

The man we pick must have car, be financially able to carry self until commissions are paid and be free to travel extensively.

Knowledge of the PRESHUR-MITE equipment is desirable, but not absolutely necessary.

We will furnish all necessary literature, catalogs and equipment needed for samples.

Send confidential resume of business and personal history to

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P. O. Box 1986 Jackson, Mississippi

MICE-GLUE

GETS MICE LIKE FLYPAPER GETS FLIES

7½ lbs. $1.00 per lb. 25 lbs. $.90 per lb.
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BIRD-REPELLENT

Keep Pigeons, Starlings and Other Birds from Buildings

7½ lbs., $1.00 per lb. 25 lbs., $.90 per lb.
100 lbs., $.80 per lb.

PEST CONTROL CHEMICALS CO.
324 Broadway Write for details Buffalo, N. Y.

pestales

Touchdown

A swivel hipped mouse did a nice piece of broken-field running in a Kansas City court house recently. Squirming under an office door, the enterprising rodent burst into full view of several women workers. Several of the ladies climbed alertly to their desk-tops and invoked authorities proper and improper. Reinforcements arrived quickly. The building superintendent, a judge and two intrepid receptionists drove the mouse under a divan. On fourth down ten, the tiny halfback swept wide around the left end of the sofa, crossed midfield closely pursued by a ruler, a shoe and a law book, and disappeared victorious into an inner office. Witnesses stated the mouse was hit several times, but managed to elude all tacklers. A puzzled building superintendent declared he had no idea how the elusive visitor got in the building.

Probably got in on an athletic scholarship.

* * *

Spanking Good Trap

Alcoa News reports the development of a new type mouse trap, which does not mutilate the rodent. According to the inventor, the entrance-way is just big enough for a mouse to get his head in. When it nibbles the bait, a guillotine-type catch pins him behind the ears, leaving his bare derriere exposed to the wind.

And a good hard paddling.

* * *

Little Sirocco

Swarms of flies recently invaded the southern Italian city of Lucera and officials of the local technical institute said they came from North Africa. It is believed the flies were carried across the Mediterranean by the sirocco, a hot wind from the Sahara Desert.

A few years ago another type of invasion occurred in North Africa coming from Italy. This one was also the result of a lot of hot air.

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Prentiss Catalogs Entire Line

Prentiss Drug & Chemical Co., New York, has compiled and published a 52-page catalog listing all of its insecticide concentrates, rodenticides, botanical drugs and chemicals.

Because most of the products mentioned are subject to speculative fluctuation, no price list is given. Customers are urged by Prentiss president Harold King to consult his firm for market information at the time desired.

A copy of the catalog can be had by writing the company at 110 William St., New York 38, N. Y.

Ward's Termite Display

Believing that public respect and understanding is the key to a termite operator's business success, Ward's Natural Science Establishment is offering a window display of illustrations depicting various phases of subterranean termite existence.

Built into a glass-topped case, the display diagrams several types of subterranean termite, including soldier, worker, nymph, winged and reproductive forms. Scenes of typical termite infestation in wood are also shown.

Additional information on this attractive sales booster can be obtained by writing the firm at Box 24, Beechwood Station, Rochester, N. Y.

Wilt Destroying Oak Trees

Oak wilt, a mysterious disease which destroys oak trees, has been discovered in the Cook County (Chicago) forest preserves. In at least six separate locations among the district's 38,000 acres of land, trees are dying from this disease. According to chief forester Noel Wysong, nobody knows what to do about it.

Scientists agree that apparently the trouble is caused by a fungus carried by insects, squirrels, woodpeckers or the wind.

Eventually the problem may yield to chemical control, but until positive knowledge of cause is found, the only recommendations being made are to root out the tree and burn it.

It is predicted that unless adequate controls are found soon, oak trees will be faced with as serious a disaster as that caused to the elm family by Dutch Elm disease.

Discovery of the new tree blight was made several years ago by Wisconsin Agricultural Experiment Station scientists. Since first noticing the disease's spread, they have traced its course through several hundred localities in nearby regions.

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ONE GALLON STAINLESS STEEL SPRAYERS

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INTERCHANGEABLE WANDS
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FOUR TYPES OF SPRAY PATTERN CAN BE HAD BY ROTATING TIP AND TIGHTENING RETAINER RING WITH FINGER PRESSURE.

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TWO NEW ELECTRIC RESIDUAL APPLICATORS FOR THE PCO

One of the Biggest Dollar Values in Power Sprayers ever Offered to the Pest Control Industry

CUT THAT BIG JOB DOWN TO YOUR SIZE

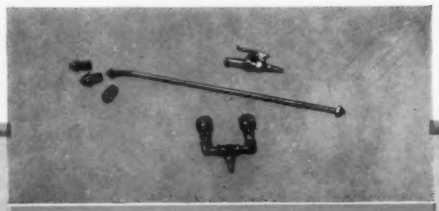
Let the Electric Residual Applicator do your pumping! Let it maintain constant pressures for you! Let it carry your insecticide through 100 feet or more of hose to the spot where you need it!
No compressor or compression tank needed. Draw insecticide or soil poisons from any size container. Simple to operate, easy to set up on the job. Handles both oil solutions and water emulsions.

Series B No. 1½ — Complete as pictured. The pump is rated at 2 gallons per minute at zero p. s. i. The motor is 1/3 h. p. Total hose, 112 feet, inside diameter ¼". Pressures up to 150 p. s. i., regulated by hand wheel adjustment. Large-screen suction strainer. Pressure gauge. Quick coupling hose connectors. Shut-off valve, three different capacity nozzles, 18" extension wand, motor-mounted electric toggle switch, 6' neoprene cord with armored plug, renewable hose end adapters, all brass nipples, bushings, cross fittings and elbows.

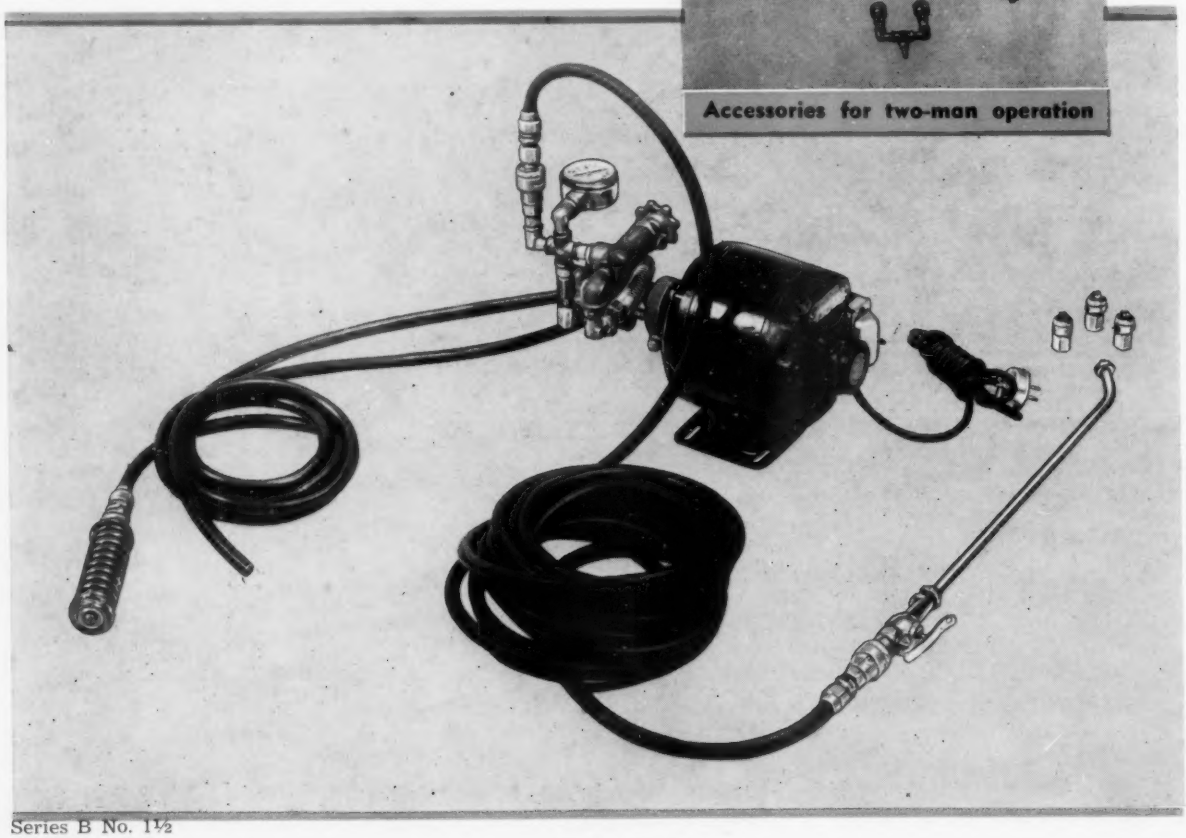
List Price Complete $168.75 To The PCO: $135.00

Fittings for two-man operation, Series B No. 1½ (as pictured) $15.00 net

Series B No. 2 — For the termite operator who wants larger pump, hose, fittings, etc. Write for detailed specifications and price.



Accessories for two-man operation



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